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Charles C. Kemp, Ph.D.

Associate Professor
Wallace H. Coulter Department of Biomedical Engineering

***Conflict of Interest Statement**: In addition to being an associate professor at Georgia Tech, Dr. Kemp is a co-founder and the chief technology officer (CTO) of Hello Robot Inc. where he works part time. He owns equity in Hello Robot and is an inventor of Georgia Tech intellectual property (IP) licensed by Hello Robot. Consequently, he receives royalties through Georgia Tech for sales made by Hello Robot and benefits from increases in the value of Hello Robot.*

I. Earned Degrees

- **Ph.D., Electrical Engineering and Computer Science**
  Massachusetts Institute of Technology
  Advisor: Prof. Rodney Brooks
  2005

- **M.Eng., Electrical Engineering and Computer Science**
  Massachusetts Institute of Technology
  1998

- **B.S., Computer Science and Engineering**
  Massachusetts Institute of Technology
  Minor: Cognitive Science
  1997

II. Employment History

- **Co-founder & Chief Technology Officer (CTO)**
  August 2017 – present
  Hello Robot Inc.

- **Associate Professor**
  August 2013 – present
  Wallace H. Coulter Department of Biomedical Engineering
  Georgia Institute of Technology and Emory University

- **Adjunct**
  April 2011 – present
  School of Electrical and Computer Engineering
  Georgia Institute of Technology

- **Adjunct**
  February 2008 – present
  School of Interactive Computing
  Georgia Institute of Technology

- **Assistant Professor**
  August 2007 – June 2013
  Wallace H. Coulter Department of Biomedical Engineering
  Georgia Institute of Technology and Emory University

- **Senior Research Scientist**
  September 2006 – August 2007

Health Systems Institute and Wallace H. Coulter Department of Biomedical Engineering
Georgia Institute of Technology and Emory University

◇ **Postdoctoral Researcher**
September 2005 – July 2006
Computer Science and Artificial Intelligence Laboratory
Massachusetts Institute of Technology
Research Advisor: Rodney Brooks

◇ **Graduate Research Assistant**
December 1998 – May 2005
AI Lab and Computer Science and Artificial Intelligence Laboratory
Massachusetts Institute of Technology
Research Advisor: Rodney Brooks

III. Honors and Awards

A. International or National Awards

2021	Robotics Business Review's RBR50 Robotics Innovation Award for Hello Robot's Stretch
2021	One of three nominees for The Best ROS Robot Award from The Construct (the venerable TurtleBot won for the 2nd year in a row)
2020	Silicon Valley Robotics Innovation Award for Hello Robot's Stretch
2019	One of 19 papers selected as PLOS ONE "Editors' Picks 2019"
2019	Facebook Reality Labs Distinguished Faculty Award
2019	Best Student Paper Award, International Conference on Rehabilitation Robotics (ICORR)
2019	Best Paper Finalist, Conference on Computer Vision and Pattern Recognition (CVPR)
2019	Best Paper Award in Service Robotics – Finalist, IEEE International Conference on Robotics and Automation (ICRA)
2015	Google Faculty Research Award
2014	Finalist for RoboCup Best Paper Award at IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
2013	Best paper finalist, IEEE-RAS International Conference on Humanoid Robots
2012	Early Career Spotlight talk at Robotics: Science and Systems (RSS)
2012	Atlanta Magazine Groundbreaker Award for the robot GATSBII
2012	NSF CAREER Award
2011	3M Non-Tenured Faculty Award
2010	Finalist for KUKA Service Robotics Best Paper Award at ICRA
2009	Nominee for World Technology Award
2007	Best paper finalist *(top 4)*, International Conference on Advanced Robotics
2006	Best paper award, IEEE-RAS International Conference on Humanoid Robotics
MIT grad	Sigma Xi, scientific research honor society
MIT ugrad	Tau Beta Pi, national engineering honor society
MIT ugrad	Eta Kappa Nu, IEEE electrical and computer engineering honor society

B. Institute or School Awards

2021	Student Recognition of Excellence in Teaching: Class of 1934 CIOS Honor Roll
2018	Class of 1940 Course Survey Teaching Effectiveness Award

2017 Hesburgh Award Teaching Fellow
2011 Georgia Tech Research Corporation Robotics Award

IV. Research, Scholarship, and Creative Activities

* An asterisk denotes a publication resulting from work performed at Georgia Tech.
Boldface for co-authors represents students and trainees advised by Prof. Kemp.

A. Published Books, Book Chapters, and Edited Volumes

A.1. Refereed Book Chapters

1. Aaron Edsinger and Charles C. Kemp. *Recent Progress in Robotics: Viable Robotic Service to Human*, volume 370 of *Lecture Notes in Control and Information Sciences*, chapter : Two Arms Are Better Than One: A Behavior Based Control System for Assistive Bimanual Manipulation, pages 345–355. Springer, Berlin / Heidelberg, 2008

A.2. Edited Volumes

1. *Paul Fitzpatrick, Kensuke Harada, Charles C. Kemp, Yoshio Matsumoto, Kazuhito Yokoi, and Eiichi Yoshida. Humanoids. In *Springer Handbook of Robotics*, pages 1789–1818. Springer, 2016

2. *Charles C. Kemp, Paul Fitzpatrick, Hirohisa Hirukawa, Kazuhito Yokoi, Kensuke Harada, and Yoshio Matsumoto. *Springer Handbook of Robotics*, chapter 56: Humanoids, pages 1307–1333. Springer, July 2008

B. Refereed Publications and Submitted Articles

B.1. Published and Accepted Journal Articles

1. *__Zackory Erickson__, __Henry M. Clever__, __Vamsee Gangaram__, __Eliot Xing__, Greg Turk, C. Karen Liu, and Charles C. Kemp. Characterizing multidimensional capacitive servoing for physical human-robot interaction. *IEEE Transactions on Robotics (T-RO)*, 2022

2. *__Henry M. Clever__, __Patrick Grady__, Greg Turk, and Charles C. Kemp. Bodypressure – inferring body pose and contact pressure from a depth image. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2022

3. *__Kavya Puthuveetil__, Charles C. Kemp, and __Zackory Erickson__. Bodies uncovered: Learning to manipulate real blankets around people via physics simulations. *IEEE Robotics and Automation Letters (RA-L)*, 2022

4. *__Tapomayukh Bhattacharjee__, __Henry M. Clever__, __Joshua Wade__ M, and Charles C. Kemp. Material recognition via heat transfer given ambiguous initial conditions. *IEEE Transactions on Haptics*, 14:885–896, June 2021

5. *Yunbo Zhang, Wenhao Yu, C. Karen Liu, Charles. C. Kemp, and Greg Turk. Learning to manipulate amorphous materials. *ACM Trans. Graph.*, 39(6), November 2020

6. *Alexander Clegg, __Zackory Erickson__, __Patrick Grady__, Greg Turk, Charles C. Kemp, and C Karen Liu. Learning to collaborate from simulation for robot-assisted dressing. *IEEE Robotics and Automation Letters*, 5(2):2746–2753, 2020

7. *__Daehyung Park__, __Yuuna Hoshi__, Harshal P. Mahajan, __Ho Keun Kim__, __Zackory Erickson__, Wendy A. Rogers, and Charles C. Kemp. Active robot-assisted feeding with a general-purpose mobile manipulator: Design, evaluation, and lessons learned. *Robotics and Autonomous Systems*, 2019

8. *__Ariel S. Kapusta__, __Phillip M. Grice__, __Henry M. Clever__, __Yash Chitalia__, __Daehyung Park__, and Charles C. Kemp. A system for bedside assistance that integrates a robotic bed and a mobile manipulator. *PloS one*, 14(10):e0221854, 2019

9. *__Ariel S. Kapusta__, __Zackory Erickson__, __Henry M. Clever__, Wenhao Yu, C Karen Liu, Greg Turk, and Charles C. Kemp. Personalized collaborative plans for robot-assisted dressing via optimization and simulation. *Autonomous Robots*, pages 1–25, 2019

10. *__Daehyung Park__, __Hokeun Kim__, and Charles C. Kemp. Multimodal anomaly detection for assistive robots. *Autonomous Robots*, 43(3):611–629, 2019

11. *__Phillip M. Grice__ and Charles C. Kemp. In-home and remote use of robotic body surrogates by people with profound motor deficits. *PloS one*, 14(3):e0212904, 2019

12. *__Zackory Erickson__, __Nathan Luskey__, Sonia Chernova, and Charles C. Kemp. Classification of household materials via spectroscopy. *IEEE Robotics and Automation Letters*, 4(2):700–707, 2019

13. *__Ariel S. Kapusta__ and Charles C. Kemp. Task-centric optimization of configurations for assistive robots. *Autonomous Robots*, pages 1–22, 2019

14. *__Zackory Erickson__, __Maggie Collier__, __Ariel S. Kapusta__, and Charles C. Kemp. Tracking human pose during robot-assisted dressing using single-axis capacitive proximity sensing. *IEEE Robotics and Automation Letters*, 3(3):2245–2252, 2018

15. *__Daehyung Park__, __Yuuna Hoshi__, and Charles C. Kemp. A multimodal anomaly detector for robot-assisted feeding using an LSTM-based variational autoencoder. *IEEE Robotics and Automation Letters*, 3(3):1544–1551, 2018

16. *__Tapomayukh Bhattacharjee__, __Henry M. Clever__, __Joshua Wade__, and Charles C. Kemp. Multimodal tactile perception of objects in a real home. *IEEE Robotics and Automation Letters*, 3(3):2523–2530, 2018

17. *Tracy L Mitzner, Lorenza Tiberio, Charles C. Kemp, and Wendy Rogers. Understanding healthcare providers' perceptions of a personal assistant robot. *Gerontechnology*, 17(1):48–55, 2018

18. *__Tiffany L. Chen__, __Tapomayukh Bhattacharjee__, Jenay M Beer, Lena H Ting, Madeleine E Hackney, Wendy A Rogers, and Charles C. Kemp. Older adults' acceptance of a robot for partner dance-based exercise. *PloS one*, 12(10):e0182736, 2017

19. *Andrew Sawers, __Tapomayukh Bhattacharjee__, J Lucas McKay, Madeleine E Hackney, Charles C. Kemp, and Lena H Ting. Small forces that differ with prior motor experience can communicate movement goals during human-human physical interaction. *Journal of neuroengineering and rehabilitation*, 14(1):8, 2017

20. *__Joshua Wade__, __Tapomayukh Bhattacharjee__, __Ryan D. Williams__, and Charles C. Kemp. A force and thermal sensing skin for robots in human environments. *Robotics and Autonomous Systems*, 96:1–14, 2017

21. *__Tapomayukh Bhattacharjee__, James M Rehg, and Charles C. Kemp. Inferring object properties with a tactile-sensing array given varying joint stiffness and velocity. *International Journal of Humanoid Robotics*, page 1750024, 2017

22. *Jenay M. Beer, Akanksha Prakash, Cory-Ann Smarr, Tiffany L. Chen, Kelsey Hawkins, Hai Nguyen, Travis Deyle, Tracy Mitzner, Charles C. Kemp, and Wendy Rogers. Older users' acceptance of an assistive robot: Attitudinal changes following brief exposure. *Gerontechnology*, 16:21–36, 2017

23. *__Marc D. Killpack__, __Ariel S. Kapusta__, and Charles C. Kemp. Model predictive control for fast reaching in clutter. *Autonomous Robots*, 40(3):537–560, 2016

24. *__Tiffany L. Chen__, __Tapomayukh Bhattacharjee__, J Lucas McKay, __Jacquelyn E. Borinski__, Madeleine E. Hackney, Lena H Ting, and Charles C. Kemp. Evaluation by expert dancers of a robot that performs partnered stepping via haptic interaction. *PloS one*, 10(5):e0125179, 2015

25. *Cory-Ann Smarr, Tracy L. Mitzner, Jenay M. Beer, Akanksha Prakash, __Tiffany L. Chen__, Charles C. Kemp, and Wendy A. Rogers. Domestic robots for older adults: Attitudes, preferences, and potential. *International Journal of Social Robotics*, 6(2):229–247, 2014

26. *TracyL. Mitzner, __Tiffany L. Chen__, Charles C. Kemp, and Wendy A. Rogers. Identifying the potential for robotics to assist older adults in different living environments. *International Journal of Social Robotics*, 6(2):213–227, 2014

27. *__Hai Nguyen__ and Charles C. Kemp. Autonomously learning to visually detect where manipulation will succeed. *Autonomous Robots*, pages 1–16, 2013

28. *__Tiffany L. Chen__, __Chih-Hung King__, Andrea L. Thomaz, and Charles C. Kemp. An investigation of responses to robot-initiated touch in a nursing context. *International Journal of Social Robotics*, pages 1–21, 2013

29. *__Advait Jain__ and Charles C. Kemp. Improving robot manipulation with data-driven object-centric models of everyday forces. *Autonomous Robots*, 35:143–159, 2013

30. *__Advait Jain__, __Marc D. Killpack__, Aaron Edsinger, and Charles C. Kemp. Reaching in clutter with whole-arm tactile sensing. *The International Journal of Robotics Research*, 32(4):458–482, 2013

31. *__Tiffany L. Chen__, Matei Ciocarlie, Steve Cousins, __Phillip M. Grice__, __Kelsey Hawkins__, Kaijen Hsiao, Charles C. Kemp, __Chih-Hung King__, Daniel A. Lazewatsky, Adam Leeper, __Hai Nguyen__, Andreas Paepcke, Caroline Pantofaru, William D. Smart, and Leila Takayama. Robots for humanity: Using assistive robotics to empower people with disabilities. *IEEE Robotics & Automation Magazine*, 20:30–39, 2013

32. *__Chih-Hung King__, __Tiffany L. Chen__, __Zhengqin Fan__, Jonathan D. Glass, and Charles C. Kemp. Dusty: an assistive mobile manipulator that retrieves dropped objects for people with motor impairments. *Disability and Rehabilitation: Assistive Technology*, 7(2):168–179, 2012. PMID: 22013888

33. *__Tiffany L. Chen__ and Charles C. Kemp. A direct physical interface for navigation and positioning of a robotic nursing assistant. *Advanced Robotics*, 25(5):605–627, 2011

34. *__Travis Deyle__, __Hai Nguyen__, Matt Reynolds, and Charles C. Kemp. RFID-guided robots for pervasive automation. *IEEE Pervasive Computing*, 9(2):37–45, April-June 2010

35. *__Advait Jain__ and Charles C. Kemp. El-e: An assistive mobile manipulator that autonomously fetches objects from flat surfaces. *Autonomous Robots*, 28(1):45–64, January 2010

36. *Charles C. Kemp, Aaron Edsinger, and Eduardo Torres-Jara. Challenges for robot manipulation in human environments. *IEEE Robotics & Automation Magazine*, 14(1):20–29, March 2007

37. *Rodney Brooks, Lijin Aryananda, Aaron Edsinger, Paul Fitzpatrick, Charles C. Kemp, Una-May O'Reilly, Eduardo Torres-Jara, Paulina Varshavskaya, and Jeff Weber. Sensing and manipulating built-for-human environments. *International Journal of Humanoid Robotics (IJHR)*, 1:1–28, March 2004

B.2. Conference Presentation with Proceedings (Refereed)

1. *__Jeremy A. Collins__, __Patrick Grady__, and Charles C. Kemp. Force/torque sensing for soft grippers using an external camera. In *Accepted to IEEE International Conference on Robotics and Automation (ICRA)*, 2023

2. *__Haoping Bai__, __Haofeng Chen__, Elizabeth Healy, Charles C. Kemp, and __Tapomayukh Bhattacharjee__. Analyzing material recognition performance of thermal tactile sensing using a large materials database and a real robot. In *2022 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, pages 2255–2262, 2022

3. *__Patrick Grady__, __Jeremy A. Collins__, Samarth Brahmbhatt, Christopher D. Twigg, Chengcheng Tang, James Hays, and Charles C. Kemp. Visual pressure estimation and control for soft robotic grippers. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022

4. *__Patrick Grady__, Chengcheng Tang, Samarth Brahmbhatt, Christopher D. Twigg, Chengde Wan, James Hays, and Charles C. Kemp. PressureVision: Estimating hand pressure from a single RGB image. In *European Conference on Computer Vision (ECCV)*, 2022

5. *Charles C. Kemp, Aaron Edsinger, __Henry M. Clever__, and Blaine Matulevich. The design of Stretch: A compact, lightweight mobile manipulator for indoor human environments. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2022

6. *Travis Kadylak, Megan Bayles, Leonardo Galoso, Maxwell Chan, Harshal Mahajan, Charles C. Kemp, Aaron Edsinger, and Wendy Rogers. A human factors analysis of the stretch mobile manipulator robot. *Accepted to Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 2021

7. *__Patrick Grady__, Chengcheng Tang, Christopher D. Twigg, Minh Vo, Samarth Brahmbhatt, and Charles C. Kemp. Contactopt: Optimizing contact to improve grasps. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1471–1481, June 2021

8. *Samarth Brahmbhatt, Chengcheng Tang, Christopher D. Twigg, Charles C. Kemp, and James Hays. ContactPose: A dataset of grasps with object contact and hand pose. In *The European Conference on Computer Vision (ECCV)*, 2020

9. *__Zackory Erickson__, __Yijun Gu__, and Charles C. Kemp. Assistive VR Gym: Interactions with real people to improve virtual assistive robots. In *IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, 2020

10. *__Zackory Erickson__, __Eliot Xing__, __Bharat Srirangam__, Sonia Chernova, and Charles C. Kemp. Multimodal material classification for robots using spectroscopy and high resolution texture imaging. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020

11. *__Henry M. Clever__, __Zackory Erickson__, __Ariel S. Kapusta__, Greg Turk, Karen Liu, and Charles C. Kemp. Bodies at rest: 3D human pose and shape estimation from a pressure image using synthetic data. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2020

12. *__Zackory Erickson__, __Vamsee Gangaram__, __Ariel S. Kapusta__, C Karen Liu, and Charles C. Kemp. Assistive Gym: A physics simulation framework for assistive robotics. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2020

13. *Samarth Brahmbhatt, Cusuh Ham, Charles C. Kemp, and James Hays. ContactDB: Analyzing and predicting grasp contact via thermal imaging. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019

14. *__Zackory Erickson__, __Henry M. Clever__, __Vamsee Gangaram__, Greg Turk, C Karen Liu, and Charles C. Kemp. Multidimensional capacitive sensing for robot-assisted dressing and bathing. *International Conference on Rehabilitation Robotics (ICORR)*, 2019

15. *__Henry M. Clever__, __Ariel S. Kapusta__, __Daehyung Park__, __Zackory Erickson__, __Yash Chitalia__, and Charles C. Kemp. 3D human pose estimation on a configurable bed from a pressure image. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 54–61. IEEE, 2018

16. *__Haoping Bai__, __Tapomayukh Bhattacharjee__, __Haofeng Chen__, __Ariel S. Kapusta__, and Charles C. Kemp. Towards material classification of scenes using active thermography. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 4262–4269. IEEE, 2018

17. *__Zackory Erickson__, __Henry M. Clever__, Greg Turk, C Karen Liu, and Charles C. Kemp. Deep haptic model predictive control for robot-assisted dressing. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 1–8. IEEE, 2018

18. *__Zackory Erickson__, Sonia Chernova, and Charles C. Kemp. Semi-supervised haptic material recognition for robots using generative adversarial networks. *1st Annual Conference on Robot Learning (CoRL)*, 2017

19. *__Zackory Erickson__, Alexander Clegg, Wenhao Yu, Greg Turk, C Karen Liu, and Charles C. Kemp. What does the person feel? learning to infer applied forces during robot-assisted dressing. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 6058–6065. IEEE, 2017

20. *__Daehyung Park__, __Hokeun Kim__, __Yuuna Hoshi__, __Zackory Erickson__, __Ariel S. Kapusta__, and Charles C. Kemp. A multimodal execution monitor with anomaly classification for robot-assisted feeding. In *IEEE International Conference on Robots and Systems (IROS)*, 2017

21. *Wenhao Yu, __Ariel S. Kapusta__, Jie Tan, Charles C. Kemp, Greg Turk, and C Karen Liu. Haptic simulation for robot-assisted dressing. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 6044–6051. IEEE, 2017

22. *__Daehyung Park__, __Zackory Erickson__, __Tapomayukh Bhattacharjee__, and Charles C. Kemp. Multimodal execution monitoring for anomaly detection during robot manipulation. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 407–414, 2016

23. *__Ashwin A. Shenoi__, __Tapomayukh Bhattacharjee__, and Charles C. Kemp. A CRF that combines touch and vision for haptic mapping. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 2255–2262, 2016

24. *__Ariel S. Kapusta__, Wenhao Yu, __Tapomayukh Bhattacharjee__, C. Karen Liu, Greg Turk, and Charles C. Kemp. Data-driven haptic perception for robot-assisted dressing. In *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pages 451–458, Aug 2016

25. *__Kevin Chow__ and Charles C. Kemp. Robotic repositioning of human limbs via model predictive control. In *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pages 473–480, Aug 2016

26. *__Tapomayukh Bhattacharjee__, __Joshua Wade__, __Yash Chitalia__, and Charles C. Kemp. Data-driven thermal recognition of contact with people and objects. In *IEEE Haptics Symposium (HAPTICS)*, pages 297–304, 2016

27. *__Phillip M. Grice__, __Yash Chitalia__, __Megan Rich__, __Henry M. Clever__, and Charles C. Kemp. Autobed: Open hardware for accessible web-based control of an electric bed. In *Annual Conference of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)*, 2016

28. *__Tapomayukh Bhattacharjee__, __Joshua Wade__, and Charles C. Kemp. Material recognition from heat transfer given varying initial conditions and short-duration contact. In *Robotics Science and Systems (RSS)*, 2015

29. *__Tapomayukh Bhattacharjee__, __Ashwin A. Shenoi__, __Daehyung Park__, James M. Rehg, and Charles C. Kemp. Combining tactile sensing and vision for rapid haptic mapping. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2015

30. *__Ariel S. Kapusta__, __Daehyung Park__, and Charles C. Kemp. Task-centric selection of robot and environment initial configurations for assistive tasks. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2015

31. *__Kelsey Hawkins__, __Phillip M. Grice__, __Tiffany L. Chen__, __Chih-Hung King__, and Charles C. Kemp. Assistive mobile manipulation for self-care tasks around the head. In *IEEE Symposium on Computational Intelligence in Robotic Rehabilitation and Assistive Technologies*, December 2014

32. *__Daehyung Park__, __Ariel S. Kapusta__, __Jeffrey Hawke__, and Charles C. Kemp. Interleaving planning and control for efficient haptically-guided reaching in unknown environments. In *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2014

33. *__Travis Deyle__, Matt Reynolds, and Charles C. Kemp. Finding and navigating to household objects with UHF RFID tags by optimizing RF signal strength. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2014

34. *__Daehyung Park__, __Ariel S. Kapusta__, __You Keun Kim__, James M. Rehg, and Charles C. Kemp. Learning to reach into the unknown: Selecting initial conditions when reaching in clutter. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2014

35. *Akanksha Prakash, Charles C. Kemp, and Wendy A. Rogers. Older adults' reactions to a robot's appearance in the context of home use. In *Proceedings of the 2014 ACM/IEEE International Conference on Human-robot Interaction*, pages 268–269, New York, NY, USA, 2014. ACM

36. *__Marc D. Killpack__ and Charles C. Kemp. Fast reaching in clutter while regulating forces using model predictive control. In *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2013

37. *__Tapomayukh Bhattacharjee__, __Ariel S. Kapusta__, James M. Rehg, and Charles C. Kemp. Rapid categorization of object properties from incidental contact with a tactile sensing robot arm. In *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2013

38. *__Phillip M. Grice__, __Marc D. Killpack__, __Advait Jain__, __Sarvagya Vaish__, __Jeffrey Hawke__, and Charles C. Kemp. Whole-arm tactile sensing for beneficial and acceptable contact during robotic assistance. In *13th International Conference on Rehabilitation Robotics (ICORR)*, 2013

39. *__Tapomayukh Bhattacharjee__, __Advait Jain__, __Sarvagya Vaish__, __Marc D. Killpack__, and Charles C. Kemp. Tactile sensing over articulated joints with stretchable sensors. In *IEEE World Haptics Conference (WHC)*, April 2013

40. *__Hai Nguyen__, Matei Ciocarlie, Kaijen Hsiao, and Charles C. Kemp. ROS Commander (ROSCo): Behavior creation for home robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2013

41. *__Travis Deyle__, Christopher Tralie, Matthew Reynolds, and Charles C. Kemp. In-hand radio frequency identification (RFID) for robotic manipulation. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2013

42. *Akanksha Prakash, Jenay M. Beer, **Travis Deyle**, Cory-Ann Smarr, **Tiffany L. Chen**, Tracy L. Mitzner, Charles C. Kemp, and Wendy A. Rogers. Older adults medication management in the home: How can robots help? In *ACM/IEEE international conference on Human-Robot Interaction (HRI)*, 2013

43. *__Tapomayukh Bhattacharjee__, James M. Rehg, and Charles C. Kemp. Haptic classification and recognition of objects using a tactile sensing forearm. In *International Conference on Intelligent Robots and Systems (IROS)*, 2012

44. *__Kelsey Hawkins__, __Chih-Hung King__, __Tiffany L. Chen__, and Charles C. Kemp. Informing assistive robots with models of contact forces from able-bodied face wiping and shaving. In *21st IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, 2012

45. *__Phillip M. Grice__, Andy Lee, Henry W. Evans, and Charles C. Kemp. The wouse: A wearable wince detector to stop assistive robots. In *21st IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, 2012

46. *Cory-Ann Smarr, Akanksha Prakash, Jenay Beer, Tracy Mitzner, Charles C. Kemp, and Wendy Rogers. Older adults' preferences for and acceptance of robot assistance for everyday living tasks. In *Human Factors and Ergonomics Society's 56th Annual Meeting (HFES)*, 2012

47. *Jenay M. Beer, Cory-Ann Smarr, Akanksha Prakash, Tracy Mitzner, Charles C. Kemp, and Wendy Rogers. "telling your robot what to do" older adults preferences for controlling home robots. In *Human Factors and Ergonomics Society's 56th Annual Meeting (HFES)*, 2012

48. *Jenay M. Beer, Cory-Ann Smarr, **Tiffany L. Chen**, Akanksha Prakash, Tracy L. Mitzner, Charles C. Kemp, and Wendy A. Rogers. The domesticated robot: design guidelines for assisting older adults to age in place. In *ACM/IEEE international conference on Human-Robot Interaction (HRI)*, pages 335–342. ACM, 2012

49. *Tracy L. Mitzner, **Tiffany L. Chen**, Charles C. Kemp, and Wendy A. Rogers. Older adults' needs for assistance as a function of living environment. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 55(1):152–156, 2011

50. *__Tiffany L. Chen__, __Chih-Hung King__, Andrea L. Thomaz, and Charles C. Kemp. Touched by a robot: an investigation of subjective responses to robot-initiated touch. In *Proceedings of the 6th international conference on Human-robot interaction*, pages 457–464. ACM, 2011

51. *__Martin Schuster__, __Jason Okerman__, __Hai Nguyen__, James M. Rehg, and Charles C. Kemp. Perceiving clutter and surfaces for object placement in indoor environments. In *Humanoid Robots (Humanoids), 2010 10th IEEE-RAS International Conference on*, pages 152–159. IEEE, 2010

52. *__Chih-Hung King__, __Tiffany L. Chen__, __Advait Jain__, and Charles C. Kemp. Towards an assistive robot that autonomously performs bed baths for patient hygiene. In *Intelligent Robots and Systems (IROS), 2010 IEEE/RSJ International Conference on*, pages 319–324. IEEE, 2010

53. *Jurgen Sturm, **Advait Jain**, Cyrill Stachniss, Charles C. Kemp, and Wolfram Burgard. Operating articulated objects based on experience. In *Intelligent Robots and Systems (IROS), 2010 IEEE/RSJ International Conference on*, pages 2739–2744. IEEE, 2010

54. *__Marc D. Killpack__, __Travis Deyle__, __Cressel Anderson__, and Charles C. Kemp. Visual odometry and control for an omnidirectional mobile robot with a downward-facing camera. In *Intelligent Robots and Systems (IROS), 2010 IEEE/RSJ International Conference on*, pages 139–146. IEEE, 2010

55. *__Advait Jain__, __Hai Nguyen__, __Mrinal Rath__, __Jason Okerman__, and Charles C. Kemp. The complex structure of simple devices: A survey of trajectories and forces that open doors and drawers. In *Biomedical Robotics and Biomechatronics (BioRob), 2010 3rd IEEE RAS and EMBS International Conference on*, pages 184–190. IEEE, 2010

56. *__Chih-Hung King__, __Marc D. Killpack__, and Charles C. Kemp. Effects of force feedback and arm compliance on teleoperation for a hygiene task. In *EuroHaptics*, pages 248–255. Springer, 2010

57. *__Advait Jain__ and Charles C. Kemp. Pulling open doors and drawers: Coordinating an omni-directional base and a compliant arm with equilibrium point control. In *Robotics and Automation (ICRA), 2010 IEEE International Conference on*, pages 1807–1814. IEEE, 2010

58. *__Tiffany L. Chen__ and Charles C. Kemp. Lead me by the hand: evaluation of a direct physical interface for nursing assistant robots. In *Proceeding of the 5th ACM/IEEE international conference on Human-robot interaction*, pages 367–374. ACM, 2010

59. *__Advait Jain__ and Charles C. Kemp. Pulling open novel doors and drawers with equilibrium point control. In *Humanoid Robots, 2009. Humanoids 2009. 9th IEEE-RAS International Conference on*, pages 498–505. IEEE, 2009

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74. Aaron Edsinger and Charles C. Kemp. Manipulation in human environments. In *Proceedings of the IEEE-RAS International Conference on Humanoid Robotics (Humanoids06)*, pages 102–109, December 2006

75. Aaron Edsinger and Charles C. Kemp. What can i control? a framework for robot self-discovery. In *Proceedings of the Sixth International Conference on Epigenetic Robotics (EpiRob 2006)*, September 2006

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78. Paul Fitzpatrick and Charles C. Kemp. Shoes as a platform for vision. In *Proceedings of the Seventh IEEE International Symposium on Wearable Computers (ISWC)*, pages 231–234, October 2003

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B.3. Other Refereed Material

1. *__Phillip M. Grice__ and Charles C. Kemp. Assistive mobile manipulation: Designing for operators with motor impairments. In *RSS workshop on Socially and Physically Assistive Robotics for Humanity*, 2016

2. *__Ariel S. Kapusta__, __Yash Chitalia__, __Daehyung Park__, and Charles C. Kemp. Collaboration between a robotic bed and a mobile manipulator may improve physical assistance for people with disabilities. In *RO-MAN workshop on behavior adaptation, interaction and learning for assistive robots (BAILAR)*, 2016

3. *__Tapomayukh Bhattacharjee__, __Phillip M. Grice__, __Ariel S. Kapusta__, __Marc D. Killpack__, __Daehyung Park__, and Charles C. Kemp. A robotic system for reaching in dense clutter that integrates model predictive control learning haptic mapping and planning. In *IROS workshop: 3rd Workshop on Robots in Clutter: Perception and Interaction in Clutter*, 2014

4. *__Hai Nguyen__ and Charles C. Kemp. Autonomous active learning of task-relevant features for mobile manipulation. In *RSS workshop – Mobile Manipulation: Learning to Manipulate*, June 2011

5. *__Hai Nguyen__, __Travis Deyle__, Matt Reyolds, and Charles C. Kemp. Pps-tags: Physical, perceptual and semantic tags for autonomous mobile manipulation. In *IROS workshop: Semantic Perception for Mobile Manipulation*, October 2009

6. *__Advait Jain__ and Charles C. Kemp. Behaviors for robust door opening and doorway traversal with a force-sensing mobile manipulator. *RSS Manipulation Workshop: Intelligence in Human Environments*, June 2008

7. *__Hai Nguyen__, __Cressel Anderson__, __Alexander J. Trevor__, __Advait Jain__, __Zhe Xu__, and Charles C. Kemp. El-e: An assistive robot that fetches objects from flat surfaces. In *Technical Report 470: Proceedings of "Robotic Helpers: User Interaction, Interfaces and Companions in Assistive and Therapy Robotics", a Workshop at ACM/IEEE HRI 2008, Amsterdam, the Netherlands*. University of Hertfordshire, UK, March 2008

8. Cynthia B. Ferrell and Charles C. Kemp. An ontogenetic perspective to scaling sensorimotor intelligence. In *Embodied Cognition and Action: Papers from the 1996 AAAI Fall Symposium*, 1996

C. Other Publications and Creative Products

C.1. Software

- **Open Source Code from the Healthcare Robotics Lab**
  Dr. Kemp's lab has released open source software that can be found via `https://sites.gatech.edu/hrl/releases`. Software from Dr. Kemp's lab has been used by people across the world.

- **Open Source Code Written by Dr. Kemp**
  Dr. Kemp has written and released extensive open source robotics software through Hello Robot Inc. This open source code is being used by researchers at universities and industry research labs across the United States. Dr. Kemp made significant contributions to software that is preinstalled on the robot Stretch. Customers use this software for tasks such as calibration, teleoperation, and demonstrations of autonomous capabilities (see `https://github.com/hello-robot`). Marketing for the launch of the robot Stretch featured demonstrations using Dr. Kemp's code. The autonomy demonstrations directly relate to published research from Dr. Kemp's lab since 2007, which he has noted in online documentation found at `https://forum.hello-robot.com/t/autonomy-video-details`.

C.2. Patents

Dr. Kemp and his student Henry M. Clever invented a robot at Georgia Tech from October 2016 to July 2017. The intellectual property (IP) they generated was exclusively licensed and successfully commercialized by Hello Robot Inc. The following patent relates to this IP.

- Patent No. US 11,230,000 B2, Mobile manipulation device, Inventors: Charles C. Kemp and Henry M. Clever, issued January 25, 2022.

C.3. Other Creative Products

- **Open Hardware, Open Data, and Open Course Materials**
  Dr. Kemp and his lab have released open hardware, open data, and open course materials that can be found at `https://sites.gatech.edu/hrl/releases/` . Open hardware includes documentation and design files for whole-arm tactile sensors, a robotic bed, multimodal tactile sensors, and more.

- **Publications with Fewer than Two Reviewers**

  1. *__Daehyung Park__, __You Keun Kim__, __Zackory Erickson__, and Charles C. Kemp. Towards assistive feeding with a general-purpose mobile manipulator. *ICRA workshop on Human-Robot Interfaces for Enhanced Physical Interactions*, 2016
  2. *__Ariel S. Kapusta__ and Charles C. Kemp. Optimization of robot configurations for assistive tasks. In *RSS workshop on Planning for Human-Robot Interaction: Shared Autonomy and Collaborative Robotics*, 2016
  3. *__Joshua Wade__, __Tapomayukh Bhattacharjee__, and Charles C. Kemp. Force and thermal sensing with a fabric-based skin. In *IROS workshop on See, Touch, and Hear : 2nd Workshop on Multimodal Sensor-based Robot Control for HRI and Soft Manipulation*, 2016
  4. *__Victor Emeli__, Alan R. Wagner, and Charles C. Kemp. A robotic system for autonomous medication and water delivery. Technical Report GT-IC-12-01, Georgia Institute of Technology, 2012
  5. *__Victor Emeli__, Charles C. Kemp, and Mike Stilman. Push planning for object placement in clutter using the pr-2. In *IROS: The PR2 Workshop*, 2011
  6. *Tracy L. Mitzner, Cory-Ann Smarr, Jenay M. Beer, __Tiffany L. Chen__, Jennifer M. Springman, Akanksha Prakash, Charles C. Kemp, and Wendy A. Rogers. Older adults' acceptance of assistive robots for the home. Technical Report HFA-TR-1105, Georgia Institute of Technology, School of Psychology, Human Factors and Aging Laboratory, 2011
  7. *__Zhengqin Fan__, __Chih-Hung King__, __Hamza Darb__, and Charles C. Kemp. Dusty: A teleoperated assistive mobile manipulator that retrieves objects from the floor. In *Second Quality of Life Technology Symposium*, 2010
  8. *__Advait Jain__ and Charles C. Kemp. Behavior-based door opening with equilibrium point control. In *RSS workshop: Mobile Manipulation in Human Environments*, June 2009
  9. *__Young Sang Choi__, __Cressel Anderson__, __Travis Deyle__, and Charles C. Kemp. Human-robot interaction studies for autonomous mobile manipulation for the motor impaired. In *Technical Report SS-09-03: Papers from the AAAI Spring Symposium, "Experimental Design for Real-World Systems"*. AAAI, March 2009
  10. *__Young Sang Choi__, __Travis Deyle__, and Charles C. Kemp. A list of household objects for robotic retrieval prioritized by people with als. Technical Report 0902.2186v1, 2009
  11. *Charles C. Kemp. Practical challenges for developmental robotics. *IEEE CIS AMD Newsletter*, 5(2):3–4, October 2008

12. *__Cressel Anderson__, Ben Axelrod, J. Philip Case, Jaeil Choi, Martin Engel, Gaurav Gupta, Florian Hecht, John Hutchinson, Niyant Krishnamurthi, Jinhan Lee, __Hai Dai Nguyen__, Richard Roberts, John G. Rogers, __Alexander J. B. Trevor__, Henrik I. Christensen, and Charles C. Kemp. Mobile manipulation: a challenge in integration. In *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series: Unmanned Systems Technology X*, volume 6962. SPIE, 2008
13. *Charles C. Kemp. Three broad themes for testing machines. *IEEE CIS AMD Newsletter*, 4(1):6–7, April 2007
14. Charles C. Kemp. Wearables and robots: A shared view. *IEEE Pervasive Computing*, 5(3):16–20, July-September 2006
15. Charles C. Kemp and Aaron Edsinger. Visual tool tip detection and position estimation for robotic manipulation of unknown human tools. Technical Report AIM-2005-037, MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), 2005
16. Charles C. Kemp. Duo: A wearable system that learns about everyday objects and actions. In *Proceedings of the Eighth International Symposium on Wearable Computers (ISWC)*, pages 182–183, October 2004

D. Presentations

Abbreviation	Full
RSS	Robotics: Science and Systems Conference
IROS	IEEE/RSJ International Conference on Intelligent Robots and Systems
AAAI	Association for the Advancement of Artificial Intelligence
HRI	ACM/IEEE International Conference on Human-Robot Interaction
ICRA	IEEE International Conference on Robotics and Automation
Humanoids	IEEE-RAS International Conference on Humanoid Robots
Ro–MAN	IEEE International Conference on Robot & Human Interactive Communication

D.1. Keynote Addresses and Plenary Lectures

1. Charles C. Kemp, "Mobile Manipulation for Healthcare", Keynote Talk at the Healthcare Robotics Engineering Forum, Boston, May, 2022

D.2. Invited Conference and Workshop Presentations

1. Charles C. Kemp, "Toward Versatile and Inclusive Mobile Manipulators", ErgoX Symposium, Atlanta, GA, October, 2022
2. Hansa Bhargava, Jim Forbes, Mark Michalski, and Charles C. Kemp, Panel on "Artificial Intelligence in Healthcare: Better Health Through Data?", Health Connect South, Atlanta, GA, September, 2022
3. Charles C. Kemp, "Emerging Opportunities in Healthcare for Mobile Robots with Arms", 16^{th} Annual Healthcare Design & Construction Symposium, Vanderbilt University, Nashville, TN, August, 2022
4. Brian Gerkey (host), Conor McGinn, Charles C. Kemp, Andrea Thomaz, "Panel: From academia to startup", ROS World, Virtual, October, 2021
5. Charles C. Kemp, "Toward a New Kind of Assistive Robot", LIBERATE 2021 - Living Better Through Rehabilitative and Assistive Technologies, NSF Convergence Workshop, Virtual, May, 2021
6. Charles C. Kemp, "Meet Stretch: Fireside Chat with Prof. Charlie Kemp from Hello Robot and Georgia Tech", Ro–MAN Workshop: HRIpreneur, Virtual, September, 2020

7. Charles C. Kemp, Panelist with slides for a "Panel on Eldercare Opportunities for Robots", Robots Unplugged, Virtual, April, 2020
8. Charles C. Kemp, "Mobile Manipulators for Personalized Caregiving", Healthcare Robotics Engineering Forum, Santa Clara, CA, December, 2019
9. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", IROS Workshop: Robots for Assisted Living Workshop, Madrid, Spain, October, 2018
10. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", International Symposium on Medical Robotics (ISMR), Atlanta, GA, March, 2018
11. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", American Congress of Rehabilitation Medicine (ACRM), Session: Emerging Technologies for Stroke Rehabilitation: Toys or Tools?, Atlanta, GA, October, 2017
12. Charles C. Kemp, "Haptic Sensing for Assistive Robots", RSS Workshop: Tactile Sensing for Manipulation: Hardware, Modeling, and Learning, Cambridge, MA, July, 2017
13. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", RSS Workshop: Human-Centered Robotics: Interaction, Physiological Integration and Autonomy, Cambridge, MA, July, 2017
14. Charles C. Kemp, "Multimodal Sensing for Assistive Robots", AAAI Symposium: Interactive Multi-Sensory Object Perception for Embodied Agents, Stanford, CA, March, 2017
15. Charles C. Kemp, "Haptic Sensing for Assistive Robots", Humanoids Workshop: Tactile sensing for manipulation: new progress and challenges, Cancun, Mexico, November, 2016
16. Charles C. Kemp, IROS Workshop: Assistive Robotics for Individuals with Disabilities: HRI Issues and Beyond, Chicago, IL, September, 2014
17. Charles C. Kemp, "Manipulation in Clutter with Whole-Arm Tactile Sensing", International Symposium of Robotics Research (ISRR), Singapore, December, 2013
18. Charles C. Kemp, "Assistive Mobile Manipulation for People with Motor Impairments: The Benefits of Touch", Humanoids Workshop: From Safety to Comfort in the Humanoid Coworker and Assistant, Atlanta, GA, October, 2013
19. Charles C. Kemp, HRI Workshop: Collaborative Manipulation, Tokyo, Japan, March, 2013
20. Charles C. Kemp, "Assistive Mobile Manipulation for People with Motor Impairments", 1st Piper Health Solutions Workshop on Rehabilitation Robotics at ASU, Phoenix, Arizona, February, 2013
21. Charles C. Kemp, "Mobile Manipulation for Healthcare", Early Career Spotlight talk at Robotics: Science and Systems (RSS), Sydney, NSW, Australia, July, 2012
22. Charles C. Kemp, "Manipulation in Clutter with Whole-arm Tactile Sensing", RSS Workshop: Robots in Clutter, Sydney, NSW, Australia, July, 2012
23. Charles C. Kemp, IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO), Half-Moon Bay, CA, October, 2011
24. Charles C. Kemp, IROS Workshop: The PR2 Workshop, San Francisco, CA, September, 2011
25. Charles C. Kemp, "RFID Object Search in the Real World: an Optimization-Based Approach", IROS Workshop: Active Semantic Perception and Object Search in the Real World, San Francisco, CA, September, 2011

26. Charles C. Kemp, IROS Workshop: Knowledge Representation for Autonomous Robots, San Francisco, CA, September, 2011

27. Charles C. Kemp, "Mobile Manipulation for Healthcare", State of the Science Conference on Workplace Accommodations, Bethesda, Maryland, April, 2011

28. Charles C. Kemp, "Autonomous Mobile Manipulation for Healthcare", Learning, Planning and Sharing Robot Knowledge for HRI, Dagstuhl Castle, Germany, October, 2010

29. Charles C. Kemp, "Assistive Mobile Manipulation for Older Adults at Home", PR2 Beta Program Workshop, Menlo Park, CA, May, 2010

30. Charles C. Kemp, "Autonomous Mobile Manipulation for Healthcare", ICRA Workshop: Mobile Manipulation, Anchorage, Alaska, May, 2010

31. Charles C. Kemp, "Cognitive Systems for the Real World", Third Interlink-Workshop on Intelligent Cognitive Systems, Santa Monica, CA, September, 2008

32. Charles C. Kemp, "Challenge Tasks for Autonomous Mobile Manipulation", AAAI Workshop: Mobility and Manipulation, Chicago, IL, July, 2008

33. Charles C. Kemp, Advancing Robotics Technology for Societal Impact (ARTSI) Faculty Summer Workshop, Pittsburgh, PA, August, 2008

34. Charles C. Kemp, "Autonomous Mobile Manipulation for Healthcare", Robotics@Intel: Personal Robotics and Mobile Manipulation Workshop, Intel Headquarters, Santa Clara, CA, June, 2008

35. Charles C. Kemp, "How much can robots do for us without learning and developing?", International Conference on Development and Learning (ICDL), London, UK, July, 2007

D.3. Conference and Workshop Presentations

1. Charles C. Kemp, "The Design of Stretch: A Compact, Lightweight Mobile Manipulator for Indoor Human Environments", IEEE International Conference on Robotics and Automation (ICRA), Philadelphia, PA, May, 2022

2. Charles C. Kemp, "My Work with Stretch at Georgia Tech", Hello Robot's 2nd Stretch Social, Virtual, April, 2022

3. Charles C. Kemp and Binit Shah, "Hello Robot: Democratizing Mobile Manipulation with ROS", Applications Track, ROS World, Virtual, October, 2021

4. Charles C. Kemp, "Dusty: A Teleoperated Assistive Mobile Manipulator that Retrieves Objects from the Floor", Second International Symposium on Quality of Life Technology, Las Vegas, NV, June, 2010

5. Charles C. Kemp, "Bio-inspired Assistive Robotics: Service Dogs as a Model for Human-Robot Interaction and Mobile Manipulation", International Conference on Biomedical Robotics and Biomechatronics (BioRob), Scottsdale, Arizona, October, 2008

6. Charles C. Kemp, "El-E: An Assistive Robot that Fetches Objects from Flat Surfaces", HRI: Workshop on Helper Robots, Amsterdam, The Netherlands, March, 2008

7. Charles C. Kemp, Sixth International Conference on Epigenetic Robotics, Paris, France, September, 2006

8. Charles C. Kemp, International Conference on Development and Learning (ICDL), Bloomington, IN, June, 2006

9. Charles C. Kemp, "Tooltip Detection for Robot Manipulation", NASA Kennedy Space Center, Cape Canaveral, Florida, 2006
10. Charles C. Kemp, "pysense: Humanoid Robots, a Wearable System, and Python", PyCon2006, Dallas, TX, February, 2006
11. Charles C. Kemp, RSS Workshop : Humanoid Manipulation, Cambridge, Massachusetts, June, 2005
12. Charles C. Kemp, "Duo: Towards a Wearable System that Learns about Everyday Objects and Action", IEEE International Symposium on Wearable Computers, Arlington, VA, Oct. – Nov., 2004
13. Charles C. Kemp, "Shoes as a Platform for Vision", IEEE International Symposium on Wearable Computers, White Plains, NY, October, 2003
14. Charles C. Kemp, IEEE International Conference on Humanoid Robots, Karlsruhe-Munich, Germany, October, 2003
15. Charles C. Kemp, DARPA Omni LifeLog Workshop, 2002
16. Charles C. Kemp, "An Ontogenetic Perspective to Scaling Sensorimotor Intelligence", AAAI Fall Symposium: Embodied Cognition and Action, Cambridge, Massachusetts, November, 1996

D.4. Invited Seminar Presentations

1. Aaron Edsinger and Charles C. Kemp, "Hello Robot: Democratizing Mobile Manipulation", OSU Robotics Seminar, Oregon State University, Virtual, November, 2021
2. Aaron Edsinger and Charles C. Kemp, "Hello Robot: Democratizing Mobile Manipulation", Robotics Seminar @ Illinois, University of Illinois Urbana-Champaign, Virtual, October, 2021
3. Charles C. Kemp, "Stretch: A Mobile Cobot for Use Case Exploration", Fermilab, Virtual, April, 2021
4. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", MIT Robotics Seminar, Cambridge, MA, November, 2017
5. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", University of Washington Robotics Colloquium, Seattle, WA, May, 2017
6. Charles C. Kemp, "Autonomous Mobile Robots for Caregiving", Park Springs Retirement Community by invitation of Prof. Robert M. Nerem, Stone Mountain, GA, October, 2015
7. Charles C. Kemp, "Autonomous Mobile Robots for Personalized Caregiving", Wesley Woods Interactive Health Seminar for older adults and individuals with Parkinson's disease, Atlanta, GA, April, 2015
8. Henry Evans and Charles C. Kemp, Kinross Wolaroi School (KWS) Speech Day in Australia, virtual attendance via Skype, December, 2014
9. Charles C. Kemp, "Autonomous Mobile Robots for Personalized Caregiving", Morehouse School of Medicine, Rehabilitative and Regenerative Medicine for Minority Health and Health Disparities (REMEDY), Atlanta, GA, June, 2014
10. Charles C. Kemp, "Autonomous Mobile Robots for Personalized Assistance", CCC / NSF Visions 2025: Interactions workshop, Washington DC, May, 2014
11. Charles C. Kemp, "Autonomous Mobile Robots for Personal Assistance", American Institute for Medical and Biological Engineering (AIMBE) Annual Meeting, Arlington, VA, March, 2014

12. Charles C. Kemp, "Mobile Manipulation for Healthcare", Atlanta Chapter of the IEEE Engineering in Medicine and Biology Society (EMBS), Atlanta, GA, January, 2013
13. Charles C. Kemp, Cornell Computer Science fall colloquium, Ithaca, NY, February, 2012
14. Charles C. Kemp, "An Assistive Robot to Fetch Everyday Objects for People with Severe Motor Impairments", Coulter Foundation, Fort Lauderdale, Florida, January, 2010
15. Charles C. Kemp, TU Munich, Germany, October, 2010
16. Charles C. Kemp, "Autonomous Mobile Manipulation for the Motor Impaired", CMU: Robotics Institute Seminar, October, 2008
17. Charles C. Kemp, "Autonomous Robot Manipulation for Healthcare", University of Cambridge, Daniel Wolpert's lab, Cambridge, UK, July, 2007

D.5. Other Presentations

External Presentations

1. Charles C. Kemp, "Commercialization of a Novel Mobile Manipulator", guest lecture for Prof. Zackory Erickson's class at CMU, 16-887: Robotic Caregivers and Intelligent Physical Collaboration, Virtual, April, 2022.
2. Charles C. Kemp, "Helper Robots!", for ≈50 Atlanta Public Schools (APS) elementary school students as part of MES Family Science Night, Virtual, March, 2022
3. Charles C. Kemp, "Towards a Future with Inclusive Mobile Manipulators", guest lecture for Prof. Maru Cabrera's assistive robotics class at UMass Lowell, Virtual, November, 2021.
4. Aaron Edsinger and Charles C. Kemp, "Democratizing Mobile Manipulation", guest lecture for class on entrepreneurship at Northwestern University, Virtual, November, 2021.
5. Charles C. Kemp, "A Brief History of Stretch: A Friendly Mobile Manipulator for Indoor Human Environments", guest lecture for CHLH 494 – Human-Robot Interaction in Community Health, University of Illinois Urbana-Champaign, Virtual, October, 2021.
6. Charles C. Kemp, "Helper Robots!", for ≈50 Atlanta Public Schools (APS) elementary school students as part of MES Family Science Night, Virtual, February, 2021
7. Charles C. Kemp, "Mobile Cobots as Assistive Technology", guest lecture for DPT899: Interfacing Engineering Technology and Rehabilitation a course with health science, engineering and applied physiology students from Georgia Tech, Emory, University of Pittsburgh, Northeastern & Harvard, Virtual, February, 2021
8. Charles C. Kemp, Panelist and speaker for "Investing in the Future of Autonomy, Mobility, and Computing in a Post Pandemic World", Northwestern University, Virtual, February, 2021

Presentations at Georgia Tech

1. Charles C. Kemp, "Why Human-Scale Mobile Manipulators Will Eventually Be In Homes", IRIM Robotics Days for Industry in Atlanta, GA, November, 2022
2. Charles C. Kemp, "Visually Estimating Contact Pressure for Humans and Robots", IRIM Fall Symposium, August, 2022

3. Charles C. Kemp, Human-Centered Robotics Panelist at IRIM's Spring 2022 Research Showcase, Atlanta, GA, March, 2022
4. Charles C. Kemp, Panelist for Workshop on AI Technologies to Support Individuals Experiencing Cognitive Decline and Their Care Networks, Atlanta, GA, February, 2022
5. Charles C. Kemp, "From One to Many: My Personal Quest for Meaningful Mobile Manipulation", Institute for Robotics and Intelligent Machines (IRIM) Research Symposium, Atlanta, GA, August, 2021
6. Charles C. Kemp, Research talk in Cohesive Collaborations 1: Biomechanics session at BME faculty retreat, Virtual, August, 2020
7. Charles C. Kemp, "The Ongoing Adventures of Charlie Kemp, Faculty Entrepreneur", Entrepreneurship talk in Faculty Entrepreneurship session at BME faculty retreat, Atlanta, GA, August, 2019
8. Charles C. Kemp, Panelist for Institute for Robotics and Intelligent Machines (IRIM) Research Showcase, Atlanta, GA, March, 2019
9. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", SURE Robotics REU research seminar, Atlanta, GA, June, 2019
10. Charles C. Kemp, "Mobile Manipulators for Intelligent Physical Assistance", SURE Robotics REU research seminar, Atlanta, GA, July, 2018
11. Charles C. Kemp, "Five Teaching Suggestions in Five Minutes", Lightning talk on teaching at BME faculty meeting, Atlanta, GA, May, 2017
12. Charles C. Kemp, "The Healthcare Robotics Lab", Lightning talk for the first Georgia Center for Medical Robotics meeting, Atlanta, GA, October, 2016
13. Charles C. Kemp, "The Healthcare Robotics Lab", Lightning talk for the Institute for Robotics and Intelligent Machines (IRIM) kickoff meeting, Atlanta, GA, September, 2016
14. Charles C. Kemp, "Autonomous Mobile Robots for Caregiving", SURE Robotics REU research seminar, Atlanta, GA, July, 2016
15. Charles C. Kemp, panelist along with professors Joe Le Doux and Ross Ethier for the BME Student Advisory Board's (bmedSAB) Town Hall on Innovation in Teaching, Atlanta, GA, April, 2016
16. Henrik Christensen, Magnus Egerstedt, and Charles C. Kemp, "Robotics@GT", To the Georgia Tech Foundation (GTF) and Georgia Tech President George P. "Bud" Peterson , Atlanta, GA, March, 2016
17. Charles C. Kemp, "Helpful Nonhumans with a Gentle Touch", Innovation and Collaboration in Liberals Arts, Science, and Technology (ICLAST), Atlanta, GA, October, 2015
18. Charles C. Kemp, "The Healthcare Robotics Lab @ Georgia Tech: 3 Things We've Learned After 8 Years", Talk for the Institute for Robotics and Intelligent Machines (IRIM) advisory board, Atlanta, GA, August, 2015
19. Charles C. Kemp, "The Healthcare Robotics Lab @ Georgia Tech: Intelligent Mobile Robots for Health-related Physical Assistance", KIST and GT Workshop, Atlanta GA, October, 2015
20. Charles C. Kemp, "Autonomous Mobile Robots for Personalized Caregiving", Petit Institute Breakfast Club, Atlanta GA, August, 2014
21. Charles C. Kemp, "Autonomous Mobile Robots for Personal Assistance", SURE Robotics REU research seminar, Atlanta, GA, June, 2014

22. Charles C. Kemp, "Assistive Mobile Manipulation for People with Motor Impairments", SURE REU research seminar, Atlanta, GA, July, 2013
23. Charles C. Kemp, "Robotic Assistance in Healthcare", Southern Society for Clinical Surgeons Meeting, April, 2012
24. Charles C. Kemp, Georgia Tech Homecoming Talk for Alumni, Atlanta, GA, October, 2011
25. Charles C. Kemp, "Mobile Manipulation for Healthcare", TRIBES-GTRI Workshop, Atlanta, GA, March, 2011
26. Charles C. Kemp, Family Weekend Talk for BME, Atlanta, GA, September, 2010
27. Charles C. Kemp, GVU Brown Bag Lecture, Atlanta, GA, November, 2010
28. Charles C. Kemp, "Autonomous Mobile Manipulation for the Motor Impaired", Engineering Psychology Colloquium, Atlanta, GA, February, 2010
29. Charles C. Kemp, "The Healthcare Robotics Lab", RIM Center Talks for GT Development, Atlanta, GA, January, 2010
30. Charles C. Kemp, "The Georgia Tech PR2 Project: Assistive Mobile Manipulation for Older Adults at Home", GVU Brown Bag Lecture, Atlanta, GA, November, 2008
31. Charles C. Kemp, "Autonomous Mobile Manipulation for Healthcare", Deka and Dean Kamen Visit, Student Center Theater, Atlanta, GA, May, 2008
32. Charles C. Kemp, "The Healthcare Robotics Lab", talk for Dr. Fred Sanfilippo Executive Vice President of Emory and CEO of the Woodruff Health Sciences Center, Atlanta, GA, November, 2007
33. Charles C. Kemp, Health Systems Student Symposium keynote presentation, Atlanta, GA, April, 2007

E. Other Scholarly and Creative Accomplishments

Dr. Kemp co-founded Hello Robot Inc. in 2017 to commercialize research from his lab.

F. Societal and Policy Impacts

F.1. Select Examples of Broader Impact and Outreach Activities

2020	Commercial robot Stretch released based on licensed IP from Prof. Kemp's lab
2007 – 2019	Ad hoc lab tours for K through 12 students and parents
2010 – 2019	National Robotics Week tours for Atlanta area high school students
2012	Robot demo (Dusty) at British Consulate Atlanta event
2010 – 2011	Hosted Dr. Mohamed Bellamine, a Fulbright Fellow from Tunisia, for 10 months
2011	Release of commercial robot (Meka M1) inspired by robot from Dr. Kemp's lab (Cody)
2009 – 2010	Atlanta Abilities Expo (Assistive Technology Pavilion) Presentations and Demos
2010	Demonstration at the ALS Association of Georgia Educational Symposium

F.2. Select Media Coverage

2022	Diversity in Action magazine	"A High-Tech Helping Hand - How robotics are changing the quality of life for the disabled community"
2022	Nature	"Robots rise to meet the challenge of caring for old people"

2021	Washington Post	"My day with Henry Evans — a quadriplegic who's gaining movement through robotics"
2021	Command Line Heroes	"Robot as Body" podcast
2020	IEEE Spectrum	"Ex-Googler's Startup Comes Out of Stealth With Beautifully Simple, Clever Robot Design"
2019	Medgadget	"Augmented Reality System Lets Severely Disabled Operate Own Robots"
2019	AT Today Magazine	"Pioneering study finds that seeing through a robot's eyes could help improve the lives of those with motor impairments"
2018	ASME website	"Robot Helps People Get Dressed"
2018	Digital Trends	"You won't even need to dress yourself in the future – thanks to robots like this"
2016	IEEE Spectrum	"Robots With Warm Skin Know What They're Touching"
2014	CNET	"RFID helps robots locate objects"
2013	Reuters	"A sense of touch makes robots more human"
2013	The New York Times	"Researchers Put Sense of Touch in Reach for Robots"
2012	CBS Evening News	"New robots giving the disabled independence"
2011	ABC News	"Personal Robot Gives Paralyzed Man Daily Help"
2011	Slashdot	Touched by a robot (Cody) research
2011	PBS NOVA	Dr. Kemp and robot (PR2) delivery to older adult
2010	NPR	Robot (Cody) skin cleansing on "Wait Wait... Don't Tell Me!"
2010	CNN	Live demo of RFID-guided robot (PR2) delivery to Ali Velshi
2010	Inside the Black Box	Interview with Dr. Kemp on a WREK radio show
2009	Good Morning America	Robot (EL-E) capabilities based on service dogs
2009	Popular Mechanics	Robot (EL-E) capabilities based on service dogs
2008	Various	Robot (EL-E) 3rd biggest Georgia Tech story for the year
2008	The New York Times	Laser pointer controlled robot (EL-E)
2005	CNN	Interview & demo of wearable (thesis) on Dr. Sanjay Gupta's show
2003	Nationwide local news	Interview & demo of wearable (thesis) via Ivanhoe Productions

G. Other Professional Activities

Co-founder and Chief Technology Officer (CTO) at Hello Robot

V. Education

A. Courses Taught

List of courses taught at Georgia Tech since 2013.

Semester	Year	Course Number	Course Title	Number of Students
Fall	2022	BMED 3410	Introduction to Biomechanics Lecture	142
Fall	2022	BMED 3410	Introduction to Biomechanics PSS	47
Fall	2021	BMED 4803/8813	Robotic Caregivers	15
Spring	2021	BMED 4803/8813	Robotic Caregivers	11
Fall	2020	BMED 2250	Problems in Biomed. Eng.	18
Spring	2020	BMED 4803/8813	Robotic Caregivers	8
Spring	2017	BMED 3400	Intro to Biomechanics	43
Fall	2016	BMED 2250	Problems in Biomed. Eng.	45
Spring	2016	BMED 3400	Intro to Biomechanics	50
Fall	2015	BMED 3400	Intro to Biomechanics	45

Spring	2015	BMED 3400	Intro to Biomechanics	58
Fall	2014	BMED 3400	Intro to Biomechanics	53
Spring	2014	BMED 3400	Intro to Biomechanics	50
Fall	2013	BMED 3400	Intro to Biomechanics	65
Spring	2013	BMED 3400	Intro to Biomechanics	72

B. Individual Student Guidance

Abbreviation	Full
AP	School of Applied Physiology
ARTSI	NSF Advancing Robotics Technology for Societal Impact Program
BME	Department of Biomedical Engineering
ChBE	School of Chemical and Biomolecular Engineering
ECE	School of Electrical and Computer Engineering
EP	School of Psychology, Engineering Psychology PhD Program
CoC	College of Computing
HSI	Health Systems Institute
IC	School of Interactive Computing
ISyE	School of Industrial and Systems Engineering
ME	School of Mechanical Engineering
ROBO	Robotics M.S. Program
SURE	NSF REU Summer Undergraduate Research in Engineering Program

B.1. Ph.D. Students

Graduated Ph.D. Students

1. **Henry M. Clever**
   Graduated with PhD in 2021
   Thesis: Modeling Humans at Rest with Applications to Robot Assistance
   Current position: Applied Research Engineer, Simulation and AI at NVIDIA
   Advising period: fall 2016 – December 2021
   Biomedical Engineering (BME) home school, Robotics PhD program

2. **Zackory Erickson**
   Graduated with PhD in 2021
   Thesis: Robotic Caregivers — Simulation and Capacitive Servoing for Physical Human-Robot Interaction
   Current position: Assistant professor at Carnegie Mellon University in the Robotics Institute
   Advising period: fall 2016 – July 2021
   Electrical and Computer Engineering (ECE) home school, Robotics PhD program

3. **Ariel Kapusta**
   Graduated with PhD in 2018
   Thesis: Task-centric optimization for assistive mobile manipulators
   Current position: Autonomous Systems Engineer, Lead – MITRE
   Advising period: spring 2013 – June 2018
   Mechanical Engineering (ME) home school, Robotics PhD program

4. **Daehyung Park**
   Graduated with PhD in 2018

Thesis: A Multimodal Execution Monitor for Assistive Robots
Current position: Assistant professor at KAIST in the School of Computing
Advising period: fall 2012 – March 2018
Interactive Computing (IC) home school, Robotics PhD program

5. **Phillip M. Grice**
   Graduated with PhD in 2017
   Thesis: Assistive Mobile Manipulation for Users with Severe Motor Impairments
   Current position: Senior Principal Robotics Software Engineer at iRobot
   NSF Graduate Research Fellow (2012-2015)
   Advising period: fall 2010 – August 2017
   Biomedical Engineering (BME) home school, Robotics PhD program

6. **Tapomayukh Bhattacharjee**
   Graduated with PhD in 2017
   Thesis: Rapid Haptic Perception using Force and Thermal Sensing
   Current position: Assistant professor at Cornell in the Department of Computer Science
   Advising period: fall 2011 – August 2017
   Biomedical Engineering (BME) home school, Robotics PhD program

7. **Tiffany Chen**
   Graduated with PhD in 2014
   Thesis: Haptic Interaction Between Naive Participants and Mobile Manipulators in the Context of Healthcare
   Current position: Manager, Human Machine Interaction Research, Toyota Research Institute (TRI)
   NSF Graduate Research Fellow (2009-2012)
   Advising period: fall 2008 – April 2014
   Biomedical Engineering (BME) home school, Robotics PhD program

8. **Hai Nguyen**
   Graduated with PhD in winter 2013
   Thesis: Constructing Mobile Manipulation Behaviors Using Expert Interfaces and Autonomous Robot Learning
   Current position: Sofware Engineer at Aurora (autonomous driving startup)
   Previous position: First employee at Mayfield Robotics (robotics startup)
   Advising period: fall 2007 – November 2013
   Interactive Computing (IC) home school, Robotics PhD program

9. **Marc Killpack**
   Graduated with PhD in winter 2013
   Thesis: Model Predictive Control with Haptic Feedback for Robot Manipulation in Cluttered Scenarios
   Current position: Associate professor with tenure in the Department of Mechanical Engineering at Brigham Young University (BYU)
   Advising period: summer 2009 – November 2013
   Mechanical Engineering (ME) home school, Robotics PhD program

10. **Advait Jain**
    Successfully defended dissertation on July 20, 2012
    Thesis: Mobile Manipulation in Unstructured Environments with Haptic Sensing and Compliant Joints
    Current position: Google (Co-founder of Redwood Robotics acquired by Google)
    TI:GER Fellow (2010-2012)

Advising period: fall 2007 – summer 2012
Interactive Computing (IC) home school, Robotics PhD program

11. **Travis Deyle**
Graduated with PhD in winter 2011
Thesis: Ultra High Frequency (UHF) Radio-Frequency Identification (RFID) for Robot Perception and Mobile Manipulation
Current position: Co-founder and CEO of Cobalt Robotics (robotics startup)
NSF Graduate Research Fellow (2007-2010)
Advising period: fall 2007 – fall 2011
Electrical and Computer Engineering (ECE) home school, ECE PhD program

12. **Young Sang Choi**
Graduated with PhD in summer 2009
Thesis: A Study of Human-Robot Interaction with an Assistive Robot to Help People with Severe Motor Impairments
Current position: Vice President, Samsung Advanced Institute of Technology
Advising period: spring 2008 – summer 2009
Industrial and Systems Engineering (ISyE) home school, ISyE PhD program

In Process Ph.D. Students

1. **Patrick Grady**
Advising period: fall 2019 – present
Fully qualified
Electrical and Computer Engineering (ECE) home school, Robotics PhD program

2. **Matthew Lamsey**
Advising period: fall 2021 – present
Mechanical Engineering (ME) home school, Robotics PhD program

3. **Naveen Balaji**
Advising period: fall 2021 – present
Aerospace Engineering (AE) home school, Robotics PhD program

B.2. M.S. Students (Indicate Thesis Option for Each Student)

Current M.S. Students

1.	Cody Houff	2022 – present	ROBO
2.	You Liang Tan	2022 – present	CoC
3.	Jeremy Collins	2021 – present	ROBO

Previous M.S. Students

4.	Pratyusha Karnati	2020 – 2021	CoC	
5.	Yijun "Esther" Gu	2019 – 2021	CoC	Thesis: "Virtual Reality as a Stepping Stone to Real-World Robotic Caregiving"
6.	Joshua Wade	2016 – 2017	ME	Thesis: "A Force and Thermal Sensing Skin for Robots in Human Environments"
7.	Ashwin A. Shenoi	2014 – 2016	ECE	Thesis: "A CRF that Combines Tactile Sensing and Vision for Haptic Mapping"
8.	Kevin Chow	2012 – 2016	ME	

9.	Newton K. Chan	2015 – 2016	ME
10.	Jeffrey Hawke	2012 – 2013	ME
11.	Kelsey Hawkins	2010 – 2012	CoC
12.	Jason Okerman	2010 – 2011	ECE
13.	Zhengqin Fan	2009 – 2010	AP
14.	Martin Schuster	2009 – 2010	CoC
15.	Jae Wook Yoo	2009	CoC
16.	Aaron Bozorg	2009	CoC
17.	Abhishek Bhatkhande	2009	ISyE
18.	Guilain Bohineust	2009	CoC
19.	Zhe "Joseph" Xu	2007 – 2008	HSI
20.	Cressel Anderson	2007 – 2009	ECE

B.3. Undergraduate Students

1.	Samantha Mutiti	2021 – present	BME
2.	David Williams	2021 – 2022	BME
3.	Kavya Puthuveetil	summer 2021	SURE
4.	Brenna Fankell	summer 2019	SURE
5.	Eliot Xing	2017 – 2021	ECE
6.	Holden Schaffer	2018 – 2020	CoC
7.	Bharat Srirangam	2018 – 2020	CoC
8.	Vamsee Gangaram	2017 – 2020	CoC
9.	Katie Sosnowski	summer 2018	SURE
10.	Mallak Taleb	summer 2018	SURE
11.	Ho Keun Kim	2016 – 2017	BME
12.	Haoping "Felix" Bai	2016 – 2018	CoC & ME
13.	Haofeng "Alex" Chen	2016 – 2018	CoC & ME
14.	Austin Jang	2017	CoC
15.	Yuuna Hoshi	2016 – 2018	ME
16.	Nathan Luskey	2017 – 2018	BME
17.	Ryan Williams	2017	ME
18.	Rohith Krishnan	2016 – 2017	CoC
19.	Maggie Collier	summer 2017	SURE
20.	Chansu Kim	2016	BME
21.	Linda Komnang Liezu	summer 2016	SURE
22.	Hyder Hasnain	spring 2015	BME
23.	Zackory Erickson	summer 2015	SURE
24.	Megan Rich	summer 2014	BME
25.	Joshua C. Wade	2013 – 2016	ME
26.	You-Keun Kim	spring 2013	BME
27.	Christopher Birmingham	summer 2014	SURE
28.	Caleb Little	summer 2014	SURE
29.	Connor Eaton	2013 – 2014	BME
30.	Yen Huang	2013 – 2014	BME
31.	Inez Raharjo	2013 – 2014	BME
32.	Jacquelyn Borinski	2013 – 2014	BME
33.	Sarvagya Vaish	2012 – 2013	ECE
34.	Anjana Kallarackal	2012	BME
35.	Ishwarya Venkatachalam	2011 – 2012	CoC
36.	Jasmine Lawrence	2012	CoC

37.	Ahalya Prabhakar	summer 2012	Caltech ME
38.	Fang Qi	2012	BME
39.	Akhil Kumar	2012	BME
40.	Joel Mathew	2010 – 2011	ME
41.	Kayode Sanni	summer 2011	SURE
42.	Mrinal "Neil" Rath	2009 – 2011	BME
43.	Kristina Falkenstrom	2009 – 2010	BME
44.	Alex McNeely	2009 & 2010	ARTSI
45.	Aakanksha Gupta	2009	BME
46.	Christopher Romano	summer 2009	ChBE
47.	Hamza Darb	summer 2009	BME
48.	Ian Guthridge	2008	CoC
49.	Khang Nguyen	2008	BME
50.	Carlos Torres	summer 2008	SURE
51.	Sugandha Arora	summer 2008	SURE

B.4. Service on Thesis or Dissertation Committees

Internal

Year	*Student*	*Advisor(s)*	*School*
2022	Weiyu Liu	Sonia Chernova	IC
2022	Victor Aladele	Seth Hutchinson	ECE
2022	Lasitha Wijayarathne	Frank Hammond	ME
2020	David Kent	Sonia Chernova	IC
2020	Samarth Brahmbhatt	James Hays	IC
2020	Wenhao Yu	Greg Turk & Karen Liu	IC
2019	Alexander Clegg	Karen Liu & Greg Turk	IC
2017	Vivian Chu	Andrea Thomaz & Sonia Chernova	IC
2016	Ana Huamán Quispe	Henrik Christensen	IC
2014	Tucker Hermans	Aaron Bobick & James Rehg	IC
2013	Jenay Beer	Dan Fisk	EP
2013	Katherine Olson	Dan Fisk	EP
2012	Douglas Brooks	Ayanna Howard	ECE
2009	Sekou Remy	Ayanna Howard	ECE
2008	Leanne Metcalfe	Brani Vidakovic	BME
2007	Shane Migliore	Steve DeWeerth	ECE

B.5. Mentorship of Postdoctoral Fellows or Visiting Scholars

Postdoctoral Fellows

1. **Chih Hung "Aaron" King**
   Advising period: summer 2009 – February 2012
   Postdoctoral Researcher

Visiting Scholars

1. **Vy Nguyen**
   Advising period: Summer 2021
   Dr. Kemp served as the Capstone Experience Site Mentor for Vy Nguyen's Doctoral Capstone Experience at Hello Robot, Inc. Vy Nguyen was a doctoral candidate from the School of Occupational

Therapy at Pacific University Oregon. She earned her doctorate in occupational therapy in August 2021.

2. **Mohamed Sahbi Bellamine, Ph.D.**
Advising period: 2010 – 2011 (10 months)
Fulbright Fellow from Tunisia

C. Educational Innovations and Other Contributions

Course Development

- **BMED 4803/8813 : Robotic Caregivers (spring 2020, spring 2021, fall 2021)**
Robotics researchers and futurists have long dreamed of robots that can serve as caregivers. In this project-based course, students learn about future opportunities and present realities for robots that contribute to caregiving. For the first two terms, Dr. Kemp co-developed this new course with his PhD student Zackory Erickson. Graduate students and undergraduates from multiple disciplines (e.g., biomedical engineering and computing) teamed up for robot projects in simulation. For the third term of the course, Dr. Kemp changed the course to use real robots. All materials are open and online.

- **BMED 8813 : Haptic Manipulation in Biology and Robotics (fall 2011)**
Dr. Kemp developed this new graduate course that focuses on the role of haptic sensing during biological manipulation, and how principles of haptic manipulation from biology can be applied to robotics.

- **4632B/8803 : Advanced Intelligent Robotics – Mobile Manipulation (spring 2007)**
Dr. Kemp co-developed this new graduate course with Henrik Christensen. Developed and presented lectures, and advised students on projects. Students used a mobile manipulator to prepare and serve coffee.

Course Improvement

- **BMED 3410 : Introduction to Biomechanics**
Dr. Kemp created a new public website to share materials and document his teaching. He also created new materials.

- **BMED 3400 : Introduction to Biomechanics**
Dr. Kemp entirely revised the course and course materials, which he has made open. Over the 13 terms he taught the course student satisfaction as estimated via course surveys dramatically improved and resulted in Dr. Kemp receiving a teaching award.

Guest Lectures

2018	CS 8803: Mobile Manipulation
2014-2015	DPT 988 (Emory): Interfacing Engineering Technology and Rehabilitation
2014	BMED 7002: Teaching Practicum
2011-2013	ROB 7785: Intro to Robotics
2010	BMED 4400: Neuroengineering Fundamentals
2010	CS 3630: IPR – Introduction to Perception and Robotics
2009	CS 3600: Introduction to Artificial Intelligence
2007	HS 6300: Health Systems Information Technology

VI. Service

A. Professional Contributions

A.1. Society Offices, Activities, and Membership

Institute of Electrical and Electronics Engineers (IEEE) Member
Association for Computing Machinery (ACM) Lifetime Member

A.2. Organization and Chairmanship of Technical Sessions, Workshops and Conferences

2021	Co-Organizer	Learning for Caregiving Robots workshop at ICRA
2013	Tour Co-Chair	IEEE-RAS International Conference on Humanoid Robots
2009, 2010	Associate Editor	IEEE International Conference on Robotics and Automation (ICRA)
2008-2011	Editorial Board	International Journal of Human-Computer Interaction (IJHCI)
2009	Guest Editor	Autonomous Robots, Special Issue on Autonomous Mobile Manipulation
2008	Publicity Chair	International Conference on Development and Learning (ICDL)
2008	Workshop Chair	Robotics: Science and Systems Conference (RSS)
2008	Co-Organizer	RSS Manipulation Workshop: Intelligence in Human Environments
2007	Lead Organizer	RSS Manipulation Workshop: Sensing and Adapting to the Real World
2006	Lead Organizer	RSS Workshop: Manipulation for Human Environments

A.3. Technical Journal or Conference Referee Activities

Canada

2009 Canada Foundation for Innovation (CFI), Leaders Opportunity Fund (LOF)

Conferences

2008, 2010, 2013, 2014, 2017	International Conference on Robotics and Automation (ICRA)
2007-2009, 2014, 2016	International Conference on Intelligent Robots and Systems (IROS)
2012	IEEE-RAS International Conference on Humanoid Robots (Humanoids)
2012	IEEE World Haptics Conference (WHC)
2011	Proceedings of the IEEE
2009-2010	ACM Conference on Human Factors in Computing Systems (CHI)
2009	RSS Workshop: Mobile Manipulation in Human Environments
2009	IEEE International Conference on Rehabilitation Robotics (ICORR)
2009	IEEE/ASME International Conference on Advanced Intelligent Mechatronics
2008-2009	ACM/IEEE International Conference on Human-Robot Interaction (HRI)

Journals

2007-2008, 2011-2014	The International Journal of Robotics Research (IJRR)
2012	Transactions on Haptics
2006-2007, 2012	Robotics & Automation Magazine
2011	Proceedings of the IEEE
2008-2010	IEEE Transactions on Robotics (TRO)
2009, 2010	Intelligent Service Robotics

2008, 2010	IEEE Transactions on Systems, Man, and Cybernetics
2006-2009	International Journal of Human-Computer Interaction (IJHCI)
2008-2009	Interaction Studies
2009	International Journal of Social Robotics (IJSR)
2006-2007	International Journal of Humanoid Robotics (IJHR)

A.4. Proposal Panels and Reviews

NSF

2012	Panel	Washington DC
2011	Adhoc	
2009	Panel	Washington DC
2008	Panel	Washington DC
2008	Adhoc	

EU

2011 & 2012	Served on three person panel for 3rd and 4th year reviews of DEXMART, an FP7 large scale integrating project (8.12 million euro) with 8 institutions involved. Reviews were held at DLR and at the Karlsruhe Institute of Technology.
2009	External Reviewer for Mario Prats Sanchez's Doctoral Thesis at Jaume I University, Castellón de la Plana, Spain (His thesis won the Georges Giralt PhD Award).

Canada

2009	Canada Foundation for Innovation (CFI), Leaders Opportunity Fund (LOF)

A.5. Other Involvement

2012	US Service Robotics Roadmapping Workshop (held at UW)
2012	US Medical and Healthcare Robotics Roadmapping Workshop (held at USC)
2008	CRA/CCC Roadmapping for Robotics Workshop: Domestic and Professional Service Robotics

B. Public and Community Service

- Prof. Kemp and his student, Henry M. Clever, invented a new kind of mobile manipulator in 2016-2017 to address a lack of available robots suitable for real-world physical assistance. Prof. Kemp co-founded Hello Robot in 2017 to commercialize this robot. In 2020, Hello Robot released open source code and began selling a capable and affordable research robot designed and assembled in the United States that are now being used by university and industry researchers across the United States.
- Prof. Kemp's lab has also released open hardware, open source code, and open data to support the broader community. For example, in 2020 Prof. Kemp's lab released Assistive Gym, an open source physics simulation system for assistive robots that supports reinforcement learning that is being used at Stanford, Berkeley, and Carnegie Mellon University (CMU). The class BMED 4803/8813 : Robotic Caregivers that Prof. Kemp developed with Zackory Erickson, his student, also uses Assistive Gym.

C. Institute Contributions

C.1. Institute Committee Service

2007 – 2016 Robotics PhD Program Committee

C.2. School Committee Service

2020 – 2021	Awards Committee
2019 – 2020, 2021 – present	Biomedical Robotics TFA Chair
2012 – 2017, 2019 – 2020	Undergraduate Committee
2009 – 2013	BME Young Innovator Speaker Series Selection Committee
2007 – 2014	BME Admissions Committee

C.3. Program Development: Research

2013 – present	Active contributing member	Institute for Robotics and Intelligent Machines (IRIM)
2006 – 2013	Active contributing member	Center for Robotics and Intelligent Machines (RIM)
2006 – 2013	Active contributing member	Health Systems Institute (HSI)

C.4. Program Development: Academic

2017	Represented BME in Robotic Minor approval process
2007 – present	Robotics PhD Program including contributing to qualifying exams

C.5. Other Institute Service Contributions

2022	Moderator & organizer for the commercialization panel at the fall BME Retreat in August
2016-2017	Founding faculty advisor for BME Robotics undergrad club (now Medical Robotics Club)
2016	BME Retreat Organizer