

Kent Lyons, Ph.D.

Founder

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EMPLOYMENT HISTORY

Inovo Studio

Founder *2022-Present*

- Stealth - broadly in the area of commercializing advanced research on wearables, IoT, sensing, artificial intelligence and user interfaces

Toyota Research Institute

Technical Lead and Staff Research Scientist

Machine Assisted Cognition Department *2020-2022*

- Co-created and co-lead the new MAC department as technical lead.
- Hired a team of nearly 20 research scientists and managers spanning AI & ML, Behavioral Science and HCI
- Set strategic vision for the department in conjunction with executives
- Guided team execution on use-inspired basic research
- Created and lead the department's IP generation processes

Staff Research Scientist *2019-2020*

- Responsible for implementation of the in cabin user experience for the Toyota LQ - a street legal concept car with L4 autonomous driving capabilities
- Directed more than a dozen contractors across several different organizations to instantiate the Yui agent
- Managed stakeholders across organizations: TRI executives, leadership at the Toyota Motor Corporation, Denso, and creative talent, and a startup providing key technology
- Brought the system up to state of the art NLP capabilities, and guided the different teams on it's usage
- Directed design and engineering resources for the vehicle's augmented reality head-up display. Contribute proof of concept code for sonifying the L4 autonomous capabilities of the vehicle

Tesla

Staff Software Engineer, Infotainment (User Interface) *2017-2019*

- Single-handedly replaced the entire speech and NLP system for all Tesla vehicles
 - Rearchitected the infotainment code base to drastically increase speech control abilities including defining a new API using protocol buffers
 - Upgraded the OS (buildroot), audio system and codebase (C++, Qt, gstreamer) which also involved fixing numerous audio codec issues more broadly
 - Wrote server side code to host our NLP system (Go) and connection to state of the art NLP cloud technology
 - Designed and implemented the NLP intents and entities for speech control of the vehicle
 - Created a process and software to enable our internationalization team
- Responsible for infotainment telemetry stream
 - Lead GDPR compliance efforts on telemetry and worked with legal and PMs to set up processes to ensure continued compliance
 - Created first of their kind dashboards about key infotainment usage
 - Used telemetry to drive down cellular costs resulting in a **savings of millions of dollars per month.**

Technicolor AI Lab

Principal Scientist *2015-2017*

- Directly worked with the CTO of the Connected Home Division. Prototyped key IoT technologies and guided products and strategy for the business.
- With a shift in interest to mixed reality, I conducted novel research and advised the business groups on key XR tech.
- Developed and patented key technologies to help replenish the licensing pipeline

WatchPop, Inc.

Co-Founder *2015*

- Co-designed and built a smart watchface for the Pebble Smartwatch.
- After 3 months we reached a 1% install penetration on all Pebble Smartwatches.
- Responsible for architecture and development of the entire product stack including embedded, mobile, cloud backend and data analytics.

Yahoo Labs

Principal Research Scientist, Mobile Research Group *2013-2015*

- Lead mobile research “beyond phones”. Designed and ran key studies around wearable technologies. Implemented prototypes and advised the BU on these technologies and their product time horizons.

Nokia Research Center

Principal Researcher and Team Manager *2013*

- Guided team on IoT and wearable tech development in conjunction with our larger Advanced Engineering division
- Instrumental in CTO’s IoT working group looking for products beyond phones

Principal Researcher *2012-2013*

- Implemented, studied and patented novel wearable computing and IoT technologies
- Developed our cloud IoT backend (python)
- Key demos to Chair of the Board of Directors, CEO and larger executive team

Intel Labs

Research Scientist *2007-2012*

- **Worked directly with Intel’s CTO** to investigate a key technology at the request of the CEO
- Consulted with Intel Capital to provide diligence on novel technologies
- Developed, studied and patented key tech in the spaces of IoT, wearables, and novel sensors.

College of Computing, Georgia Tech

Research Scientist *2005-2007*

Graduate Research Assistant *1999-2005*

Undergraduate Research Assistant *1998-1999*

Intel Research Berkeley Research Intern *2002*

Charmed Technologies Associate Scientist *2001*

Western Research Laboratory (Compaq/DEC) Research Intern *2000*

EDUCATIONAL BACKGROUND

Degree	Year	University	Field
Ph.D.	2005	Georgia Institute of Technology, Atlanta, GA., USA. “Improving Support of Conversations by Enhancing Mobile Computer Input” <i>Advisor: Thad Starner</i>	<i>Computer Science</i>
M.S.	2001	Georgia Institute of Technology, Atlanta, GA., USA.	<i>Computer Science</i>
B.S.	1999	Georgia Institute of Technology, Atlanta, GA., USA. <i>Highest Honors</i>	<i>Computer Science</i>

I. RESEARCH AND CREATIVE SCHOLARSHIP

A. Thesis

Ph.D. Thesis

Title: “*Improving Support of Conversations by Enhancing Mobile Computer Input.*”
Date Completed: *August 2005*,
Advisor: *Dr. Thad Starner*,
University: *Georgia Institute of Technology.*

B. Published Journal Papers (refereed)

- B.1.7. R. Khurana, M. Goel, K. Lyons. “Detachable Smartwatch: More Than A Wearable”. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Volume 3(2), pp. 50:1–50:14, 2019.
- B.1.6. C. Kao, A. Bedri, K. Lyons. “SkinWire: Fabricating a Self-Contained On-Skin PCB for the Hand”. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Volume 2(3), pp. 116:1–116:23, 2018.
- B.1.5. C. Zhang, Q. Xue, A. Waghmare, S. Jain, Y. Pu, S. Hersek, K. Lyons, K. Cunefare, O. Inan, G. Abowd. “SoundTrak: Continuous 3D Tracking of a Finger Using Active Acoustics”, Proceedings of the ACM on Interactive, Mobile, Wearable Ubiquitous Technologies, Volume 1(2), pp 30:1–30:25, 2017.
- B.1.4. K. Lyons, H. Profita. “The Multiple Dispositions of On-Body and Wearable Devices”, IEEE Pervasive Computing, Volume 13(4), pp. 24–31, 2014.
- B.1.3. N. Patel, J. Clawson, A. Volda, K. Lyons. “Mobiphos: A Study of User Engagement with a Mobile Collocated-Synchronous Photo Sharing Application.” International Journal of Human-Computer Studies. Volume 67(12) pp. 1048-1059, 2009
- B.1.2. S. Sud, R. Want, T. Pering, B. Rosario, K. Lyons. “Enabling rapid wireless system composition through layer-2 discovery.” IEEE Network. Volume 22(4), pp. 14–20, 2008.
- B.1.1. K. Lyons, B. Gane, and T. Starner. “Experimental Evaluations of the Twiddler One-Handed Chording Mobile Keyboard.” Human-Computer Interaction. Volume 21(4), pp. 343–392, 2006.

C. Conference Presentations

C.1. Conference Presentations with Proceedings (refereed)

[Publication (as a full paper, a short paper or a technical note) in peer refereed conference/workshop proceedings.]

- C.1.43. R. Currano, S.Y. Park, D.J. Moore, KL, D. Sirkin. “Little Road Driving HUD: Heads-Up Display Complexity Influences Drivers’ Perceptions of Automated Vehicles” Proceedings of CHI 21. Virtual/Yokohama, Japan. May 2021.
- C.1.42. K. Lyons. “Wearable Magnetic Field Sensing for Finger Tracking”. Proceedings of ISWC 20. Virtual. September 2020.
- C.1.41. R. Khurana, N. Banovic, K. Lyons. “In Only 3 Minutes: Perceived Exertion Limits of Smartwatch Use”. Proceedings of ISWC 18. Singapore, Singapore. October 2018.

- C.1.40. S. Hamidi-Rad, K. Lyons, N. Goela. “Infrastructure-less indoor localization using light fingerprints”. Proceedings of International Conference on Acoustics, Speech and Signal Processing (ICASSP). New Orleans, LA. March 2017.
- C.1.39. K. Lyons. “2D Input for Virtual Reality Enclosures with Magnetic Field Sensing”. Proceedings of ISWC 16. Heidelberg, Germany. September 2016.
- C.1.38. H. Seifi, K. Lyons. “Exploring the Design Space of Touch-based Vibrotactile Interactions for Smartwatches”. Proceedings of ISWC 16. Heidelberg, Germany. September 2016.
- C.1.37. K. Lyons. “Visual Parameters Impacting Reaction Times on Smartwatches”. In Proceedings of MobileHCI 2016. Florence, Italy. September 2016.
- C.1.36. C. Zhang, M. Patel, S. Buthpitiya, K. Lyons, B. Harrison, G. Abowd. “Driver Classification Based on Driving Behaviors”. In Proceedings of IUI 16. Sonoma, CA. March 2016.
- C.1.35. H. Jin, C. Xu, K. Lyons. “Corona: Positioning Adjacent Device with Asymmetric Bluetooth Low Energy RSSI Distributions”. In Proceedings of UIST 15. Charlotte, NC. November 2015.
- C.1.34. K. Lyons. “What Can a Dumb Watch Teach a Smartwatch? Informing the Design of Smartwatches”. In Proceedings of ISWC 2015. Osaka, Japan. September 2015. **Honorable Mention Award.**
- C.1.33. K. Church, D. Ferreira, N. Banovic, K. Lyons. “Understanding the Challenges of Mobile Phone Usage Data”. In Proceedings of MobileHCI 2015. Copenhagen, Denmark. August 2015. **Honorable Mention Award.**
- C.1.32. C. Xu, K. Lyons. “Shimmering Smartwatches: Exploring the Smartwatch Design Space”. In Proceedings of TEI 2015. Stanford, CA. January 2015.
- C.1.31. K. Lyons, S.W. Kim, S. Seko, D. Nguyen, A. Desjardins, M. Vidal, D. Dobbstein, J. Rubin. “Loupe: a handheld near-eye display”. In Proceedings of UIST 2014. Honolulu, HI. October 2014.
- C.1.30. M. Vidal, D. H. Nguyen, K. Lyons. “Looking at or through?: using eye tracking to infer attention location for wearable transparent displays”. Proceedings of ISWC 2014. Seattle, WA. September 2014.
- C.1.29. K. Chen, K. Lyons, S. White, S. Patel. “uTrack: 3D Input Using Two Magnetic Sensors.” Proceedings of UIST 2013. St. Andrews, UK. October 2013.
- C.1.28. K. Lyons, D.H. Nguyen, D. Ashbrook, S. White. “Facet: A Multi-Segment Wrist Worn System.” Proceedings of UIST 2012. Cambridge, MA. October 2012.
- C.1.27. B. Rosario, K. Lyons, J. Healey. “A dynamic content summarization system for opportunistic driver infotainment.” Proceedings of AutoUI 2011. Salzburg, Austria. November, 2011.
- C.1.26. A. Abu-Jbara, B. Rosario, K. Lyons. “Towards Writing Style Transformation from Text-Style to Audio-Style.” Proceedings of the 49th Annual Meeting of the Association for computational Linguistics (ACL 2011). Portland, OR. June 2011.
- C.1.25. T. Pering, K. Lyons, R. Want, M. Murphy-Hoye, M. Baloga, P. Noll, J. Branc, N. De Benoist. “What Do You Bring To the Table? Investigations of a Collaborative Workspace.” Proceedings of UbiComp 2010. Copenhagen, Denmark. September 2010.
- C.1.24. S. Sud, R. Want, T. Pering, K. Lyons, B. Rosario, M. X. Gong. “Dynamic Migration of Computation through Virtualization of the Mobile Platform.” Proceedings of MobiCASE 2009. San Diego, CA. October 2009.

- C.1.23. K. Lyons, T. Pering, B. Rosario, S. Sud and R. Want. “Multi-Display Composition: Supporting Display Sharing for Collocated Mobile Devices.” Proceedings of Interact 2009. Uppsala, Sweden. August 2009.
- C.1.22. T. Pering, R. Want, B. Rosario, S. Sud, K. Lyons. “Enabling Pervasive Collaboration with Platform Composition.” Proceedings of Pervasive 2009. Nara, Japan. May 2009. **Best Paper Award**.
- C.1.21. K. Lyons, R. Want, D. Munday, J. He, S. Sud, B. Rosario, T. Pering. “Context Aware Composition” Proceedings of HotMobile 2009. Santa Cruz, CA. February 2009.
- C.1.20. J. Clawson, A. Volda, N. Patel, K. Lyons. “Mobiphos: A Collocated-Synchronous Mobile Photo Sharing Application.” Proceedings of Mobile HCI 2008. Amsterdam, the Netherlands. September 2008.
- C.1.19. D. Ashbrook, K. Lyons, T. Starner. “An Investigation into Round Touchscreen Wristwatch Interaction.” Proceedings of Mobile HCI 2008. Amsterdam, the Netherlands. September 2008.
- C.1.18. D. Ashbrook, J. Clawson, K. Lyons, T. Starner, N. Patel. “Quickdraw: The Impact of Mobility and On-Body Placement on Device Access Time.” Proceedings of CHI 08. Florence, Italy. April 2008.
- C.1.17. J. Clawson, K. Lyons, A. Rudnick, R.A. Iannucci Jr., T. Starner. “Automatic Whiteout++: Correcting Mini-QWERTY Typing Errors.” Proceedings of CHI 08. Florence, Italy. April 2008.
- C.1.16. J.S. Kim, J. He, K. Lyons, T. Starner. “The Gesture Watch: A Wireless Contact-free Gesture based Wrist Interface.” Proceedings of the International Symposium on Wearable Computers, Boston, MA. October 2007.
- C.1.15. J. Clawson, A. Rudnick, K. Lyons, and T. Starner. “Automatic Whiteout: Discovery and Correction of Typographical Errors in Mobile Text Input”. Proceedings of MobileHCI 07. Singapore, September 2007.
- C.1.14. E. Clarkson, K. Lyons, J. Clawson and T. Starner. “Revisiting and Validating a Model of Two-Thumb Text Entry.” Proceedings of CHI 07. San Jose, CA. May 2007.
- C.1.13. K. Vadas, N. Patel, K. Lyons, T. Starner, and J. Jacko. “Reading On-the-Go: A Comparison of Audio and Hand-held Displays.” Proceedings of Mobile HCI 2006. Espoo, Finland. September 2006. 24% acceptance.
- C.1.12. J. Clawson, K. Lyons, T. Starner, and E. Clarkson. “The Impacts of Limited Visual Feedback on Mobile Text Entry for the Twiddler and Mini-QWERTY Keyboards.” Proceedings of the International Symposium on Wearable Computers. Osaka, Japan. November 2005. 25% acceptance. **Nominated for Best Paper Award**.
- C.1.11. K. Lyons, C. Skeels, and T. Starner. “Providing Support for Mobile Calendaring Conversations: A Wizard of Oz Evaluation of Dual-Purpose Speech.” Proceedings of Mobile HCI 2005. Salzburg, Austria. September 2005.
- C.1.10. K. Lyons, B. Gane, T. Starner, and R. Catrambone. “Improving Novice Performance on the Twiddler One-Handed Chording Keyboard.” Proceedings of the International Forum on Applied Wearable Computing. Zurich, Switzerland. March 2005.
- C.1.9. K. Lyons, D. Plaisted, and T. Starner. “Expert Chording Text Entry on the Twiddler One-Handed Keyboard.” Proceedings of the International Symposium on Wearable Computers. Arlington, VA. November 2004. pp. 94-101.

- C.1.8. K. Lyons, C. Skeels, T. Starner, C.M. Snoeck, B.A. Wong, and D. Ashbrook. “Augmenting Conversations Using Dual-Purpose Speech.” Proceedings of UIST 2004. Sante Fe, NM. October 2004. pp. 237-246.
- C.1.7. K. Lyons, T. Starner, D. Plaisted, J. Fusia, A. Lyons, A. Drew, and E. W. Looney. “Twiddler Typing: One-Handed Chording Text Entry for Mobile Phones.” Proceedings of CHI 2004. Vienna, Austria. April 2004.
- C.1.6. K. Lyons, N. J. Patel and T. Starner. “KeyMenu: A Keyboard Based Hierarchical Menu.” Proceedings of the International Symposium on Wearable Computers. White Plains, NY. October 2003.
- C.1.5. K. Lyons. “Everyday Wearable Computer Use: A Case Study of an Expert User.” Proceedings of Mobile HCI 2003. Udine, Italy. September 2003.
- C.1.4. E. M. Huang, M. Terry, E. Mynatt, K. Lyons, and Alan Chen. “Distributing Event Information by Simulating Word-of-Mouth Exchanges.” Proceedings of Mobile HCI 2002. Pisa, Italy. September 2002.
- C.1.3. K. Lyons and T. Starner. “Mobile Capture for Wearable Computer Usability Testing.” Proceedings of the International Symposium on Wearable Computers. Zurich, Switzerland, October 2001, pp. 69-76.
- C.1.2. K. Lyons, L. Harvel, and T. Starner. “A Context-based Document System for Wearable Computers.” Proceedings of the International Symposium on Wearable Computers. Atlanta, GA, October 2000, pp. 187-188.
- C.1.1. K. Lyons, M. Gandy, and T. Starner. “Guided by Voices: An Audio Augmented Reality System.” International Conference on Auditory Display (ICAD). Atlanta, GA, April 2000, pp. 57-62.

C.2. Chapters in Books

- C.2.1. D. Ashbrook, K. Lyons, J. Clawson, T. Starner. “Methods of Evaluation for Wearable Computing.” *In Smart Clothing: Technology and Applications*, G. Cho (editor), CRC Press, Chapter 9, pp 229-248, 2009.

C.3. Doctoral Consortium

- C.3.1. K. Lyons. “Enhancing Support of Conversations by Improving Mobile Computing Input.” Extended Abstracts of UIST 2004. Sante Fe, NM. October 2004.

C.4. Conference Presentations with Proceedings (non-refereed)

- C.4.2. K. Lyons, H. Brashear, T. Westeyn, J.S. Kim and T. Starner. “GART: The Gesture and Activity Recognition Toolkit.” Proceedings of HCI International. Beijing, China. July 2007.
- C.4.1. T. Starner, B. Leibe, B. Singletary, K. Lyons, M. Gandy, and J. Pair. (invited paper) Towards Augmented Reality Gaming. Proc. of IMAGINA, Monte Carlo, January 2000.

C.5. Conference Presentations: Posters

- C.5.7. S. Pan, K. Lyons, H. Y. Noh, P. Zhang. “Multiple Pedestrian Tracking through Ambient Structural Vibration Sensing”. Proceedings of SenSys 2016. Stanford, CA. November 2016. **Best Poster Award.**
- C.5.6. K. Lyons. “Using Digital Watch Practices to Inform Smartwatch Design”. CHI 2015 Extended Abstracts. Seoul, S. Korea. April 2015.
- C.5.5. K. Lyons, D. H. Nguyen, S. Seko, S. White, D. Ashbrook, and H. Profita. “BitWear: a platform for small, connected, interactive devices”. UIST ’13 Adjunct Proceedings. St. Andrews, UK. October 2013.
- C.5.4. A. Lucero, K. Lyons, A. Vetek, T. Järvenpää, S. White, M. Salmimaa. “Exploring the interaction design space for interactive glasses.” CHI 2013 Extended Abstracts. Paris, France. May 2009.
- C.5.3. M.C. Doo, K. Lyons, T. Starner. “The Korean Twiddler: One-handed Chording Text Entry for Korean Mobile Phones.” Extended Proceedings of CHI 2006. Montreal, Canada. April 2006.
- C.5.2. K. Lyons, and Thad Starner. “Augmenting Cognition with Wearable Computers.” Human Computer Interaction International, Las Vegas, NV. July 2005.
- C.5.1. E. Clarkson, J. Clawson, K. Lyons, and T. Starner. “An Empirical Study of Typing Rates on mini-QWERTY Keyboards.” Extended Proceedings of CHI. Portland, OR. April 2005.

C.6. Conference Presentations: Demonstrations

- C.6.2. D.A. Shamma, M. Lee, A. Filipowicz, L. Denoue, K. Glazko, K. Murakami, and K. Lyons. “EV Life: A Counterfactual Dashboard Towards Reducing Carbon Emissions of Automotive Behaviors.” In IUI ’22 Companion. Virtual. March 2022.
- C.6.1. T. Pering, S. Sud, B. Rosario, K. Lyons, R. Want. “Dynamically Composable Computing.” Hot-Mobile 2008: The Ninth Workshop on Mobile Computing Systems and Applications. Napa Valley, CA. February 2008.

C.7. Conference Presentations: Panels

- C.7.1. Moderator: T. Starner. Panelists: A. Oranchak, G. Priest-Dorman, L. Buechley, K. Lyons. “Living with a wearable computer.” Invited panel at the International Symposium on Wearable Computers, Boston, MA. October 2007.

C.8. Conference Organization of Tutorials, Courses, & Workshops

- C.8.5. A. Lucero, J. Clawson, K. Lyons, J.E. Fischer, D. Ashbrook, S. Robinson. “Mobile Collocated Interactions: From Smartphones to Wearables.” Workshop at CHI 15. Seoul, Korea. April 2015.
- C.8.4. D. Ashbrook, K. Lyons. “Ensembles of On-Body Devices.” Workshop at Mobile HCI 10. Lisbon, Portugal. September 2010. 10 participants.
- C.8.3. J. Biehl, G. Golovchinsky, K. Lyons. “Beyond the Laboratory: Supporting Authentic Collaboration with Multiple Displays.” Workshop at CSCW 08. San Diego, CA. November 2008. 18 participants.

- C.8.2. T. Pering and K. Lyons. “Stargate Wearable Platform.” Tutorial (3 hours) at ISWC. Osaka, Japan. November 2005. 15 attendees.
- C.8.1. T. Starner and K. Lyons. “Wearable and Mobile Human Computer Interaction.” Tutorial (3 hours) at ISWC. Arlington, VA. November 2004. 35 attendees.

C.9. Papers (non-refereed)

- C.9.10. N. Arechiga, F. Chen, R. Iliev, E. Sumner, S. Carter, A. Filipowicz, N. Bravo, M. Van, K. Glazko, K. Murakami, L. Denoue, C. Hogan, K. Sieck, C. Wu, K. Lyons. “Understanding and Shifting Preferences for Battery Electric Vehicles.” arXiv preprint arXiv:2202.08963. Feb 2022.
- C.9.9. N. Arechiga, F. Chen, Y.Y. Chen, Y. Zhang, R. Iliev, H. Toyoda, and K. Lyons. “Accelerating Understanding of Scientific Experiments with End to End Symbolic Regression.” arXiv preprint arXiv:2112.04023. Dec 2021.
- C.9.8. K. Lyons. “Smartwatch Innovation: Exploring a Watch-First Model”, *IEEE Pervasive Computing*, Volume 15(1), pp. 10–13, 2016.
- C.9.7. K. Lyons, J. Clawson. “Analytical Evaluation of the Impact of Phrase Set on Text Entry Rates.” *CHI 2012 Workshop on Text Entry*. Austin, TX. April 2012.
- C.9.6. P. Lukowicz and K. Lyons. “ISWC 09: 13th International Symposium on Wearable Computers.” *IEEE Pervasive Computing*, 9(s): pp. 6-7, 2010.
- C.9.5. K. Lyons. “Insights form Wearable Computing on Research for Mobile User Experience.” *CHI 2009 Workshop on Mobile User Experience Research*. Boston, MA. April 2009.
- C.9.4. C. Randell, R. Want, K. Lyons, A. Smailagic. “International Symposium on Wearable Computing (ISWC) 2008.” *IEEE Pervasive Computing*, 8(1): pp. 14-17, 2009.
- C.9.3. D. Ashbrook, K. Lyons, and J. Clawson. “Capturing Experiences Anytime, Anywhere.” *IEEE Pervasive Computing*, 5(2): pp. 6-7, 2006.
- C.9.2. T. Starner, K. Lyons, and R. Grinter. “Missing the Wave? Scattershot Funding Has Its Costs.” *IEEE Pervasive Computing*, 4(1): pp. 80-82, 2005.
- C.9.1. T. Starner, B. Leibe, B. Singletary, K. Lyons, M. Gandy, and J. Pair. “Exploring Mobile and Desk-based Gaming Appliances.” Sidebar in “Survey on Information Appliances.” *IEEE Computer Graphics and Applications (CGA)*, 20(3): p. 22, May 2000.

C.10. Technical Reports

- C.10.3. F. Bentley, K. Church, B. Harrison, K. Lyons, M. Rafalow “Three Hours a Day: Understanding Current Teen Practices of Smartphone Application Use” arXiv preprint arXiv:1510.05192. 2015 <http://arxiv.org/abs/1510.05192>
- C.10.2. K. Vadas, K. Lyons, D. Ashbrook, J. S. Yi, T. Starner, and J. Jacko. “Reading on the Go: An Evaluation of Three Mobile Display Technologies.” *Graphics Visualization and Usability Center Tech Report 06-09*. 2006.
- C.10.1. K. Lyons, C. Kidd, and T. Starner. “Widespread Easy and Subtle Tracking with Wireless Identification Networkless Devices - WEST WIND: an Environmental Tracking System.” *Graphics Visualization and Usability Center Tech Report 00-15*. 2000.

D. Patents

D.1. Granted

- D.1.24. K. Lyons. “Apparatus and method for providing for receipt of indirect touch input to a touch screen display”. Patent number 11,360,652, issued 6/14/22.
- D.1.23. J. Bolot, K. Lyons, A. Pushparaja, A. Pudhiyaveetil. “Method and devices for providing wireless coverage”. Patent number 11,323,867, issued 5/3/22.
- D.1.22. S. Hamidi-Rad, K. Lyons, A. Zhang “Method and apparatus for providing immersive reality content”. Patent number 11,119,567, issued 9/14/21.
- D.1.21. K. Lyons. “Apparatus and method for identifying objects using social links”. Patent number 10,880,110, issued 12/29/20.
- D.1.20. J. Ratcliff, K. Lyons. “Techniques for augmented social networking”. Patent number 10,701,114, issued 6/30/20.
- D.1.19. D. Nguyen, S. Seko, K. Lyons, S.W. Kim, A. Desjardin. “Determination of a display angle of a display”. Patent number 10,497,096, issued 12/3/20.
- D.1.18. F. Bentley, K. Lyons, C. Holz. “Method and System for Automatic Generation of Personalized Applications” Patent Number 10,387,519, issued 8/20/19.
- D.1.17. K. Lyons. “Cognitive load assessment for digital documents”. Patent Number 10,108,316, issued 10/23/18.
- D.1.16. H. Jin, K. Lyons, C. Xu. “System and Method for Device Positioning with Bluetooth Low Energy Distributions” Patent Number 10,003,913, issued 6/19/18.
- D.1.15. J. Ratcliff, K. Lyons. “Techniques for Augmented Social Networking” Patent Number 9,894,116, issued 2/13/18.
- D.1.14. S. White, D. Nguyen, K. Lyons, D. Ashbrook. “Medical diagnostic gaze tracker” Patent 9,888,842, issued 2/13/18.
- D.1.13. K. Lyons, T. Pering. “Gaze Activated Content Transfer System” Patent Number 9,766,700, issued 9/19/17.
- D.1.12. D. Nguyen, K. Lyons. “Multi-segment wearable accessory”. Patent number 9,696,690, issued 7/4/17.
- D.1.11. T. Pering, R. Want, K. Lyons, B. Rosario. “Sensor Fusion to Combine Sensor Input Data from Multiple Devices into One Input Stream.” Patent number 9,662,569, issued 5/30/17.
- D.1.10. J. Ratcliff, K. Lyons. “Enhanced Information Delivery Using a Transparent Display”, Patent number 9,626,522, issued 5/9/17.
- D.1.9. H. Jin, K. Lyons, C. Xu. “System and Method for Device Positioning with Bluetooth Low Energy Distributions”. Patent number 9,602,956, issued 3/21/17.
- D.1.8. K. Lyons, J. Ratcliff, H. Haussecker. “Interactive Screen Viewing” Patent number 9,361,718, issued 6/7/16.
- D.1.7. K. Lyons, D. Nguyen, D. Ashbrook. “Multi-segment wearable accessory”. Patent number 9,122,249, issued 9/1/15.
- D.1.6. D. Ashbrook, S. White, D. Nguyen, K. Lyons. “Method and apparatus for attracting a user’s gaze to information in a non-intrusive manner”. Patent number 9,030,505, issued 5/12/15.

- D.1.5. K. Lyons, D. Nguyen, S. White. “Multi-segment wearable accessory”. Patent number 8,872,729, issued 10/28/14.
- D.1.4. J. Lipman, T. Pering, J. Zhao, K. Lyons. “Mechanism for Proximity Detection Based on Wi-Fi Signals”. Patent number 8,824,316, issued 9/2/14.
- D.1.3. K. Lyons, R. Want, T. Pering. “Dynamic geometry management of virtual frame buffers for appendable logical displays.” Patent number 8,686,921, issued 4/1/14.
- D.1.2. B. Kveton, K. Lyons. “Adaptive face recognition using online learning”, Patent number 8,625,860, issued 1/7/2014.
- D.1.1. K. Lyons, B. Rosario, T. Pering, R. Want. “User Model Creation”. Patent number 8,560,484, issued 10/15/13.

E. Research Proposals and Grants (Principal Investigator)

1. Approved and Funded

E.1.1 Automatic Correction of mini-QWERTY Typing Errors

Sponsor: Nokia Research

Investigator(s): K. Lyons

Amount: *Gift: \$30,000.*

Submitted June 2007, Funded July 2007.

E.1.2 Wearable Remote Control for Operator Training Simulators

Sponsor: GSE Systems

Investigator(s): K. Lyons(PI) and T. Starner

Amount: *\$30,000 for 4 months.*

Submitted: July 2006. Funded October 2006.

E.1.3 Evaluation of Interaction on Mobile Phones

Sponsor: Panasonic Wireless Design Center

Investigator(s): K. Lyons

Amount: *\$7,000 (Equipment)*

Submitted and Funded July 2005.

F. Research Proposals and Grants (Contributor)

1. Approved and Funded

F.1.1 Capture Resistant Environment

Sponsor: Georgia Research Alliance

Investigator(s): G. Abowd (PI), J. Clawson, K. Lyons, J. Summet and S. Patel

Amount: *\$50,000 for 5 months.*

Submitted: November 2005. Funded: December 2005.

G. Honors and Awards

- Distinguished Member of Technicolor Fellowship Network 2017
- Best Poster Award SenSys 2016 (C.5.7).
- Honorable Mention Award ISWC 2015 (C.1.34).

- Honorable Mention Award Mobile HCI 2015 (C.1.33).
- Intel Labs Divisional Recognition Award 2011
- Intel Labs Divisional Recognition Award 2009
- Best Paper Award Pervasive 2009 (C.1.22).
- Intel CTG Divisional Recognition Award 2008
- Nominated Best Paper ISWC 2005 (C.1.12).
- Gamma Beta Phi Honor Society 1997-1999
- Golden Key Honor Society 1997-1999
- Hope Scholarship 1995-1999
- Governor's Scholarship 1995

II. TEACHING

A. Courses Taught

Term/Year	Course Number & Title	Number of Students
College of Computing, Georgia Institute of Technology.		
Spring, 2007	CS 4801 Building Mobile and Ubiquitous Computers <i>Co-taught with Thad Starner</i>	16
Spring, 2007	CS 8001 Human-Computer Interaction Seminar	10
Fall, 2006	CS 8001 Human-Computer Interaction Seminar	16
Spring, 2006	CS 8001 Human-Computer Interaction Seminar	9
Spring, 2006	CS 4750 Human-Computer Interface Design & Evaluation	34

B. Teaching Assistant

Term/Year	Course Number & Title	Number of Students
College of Computing, Georgia Institute of Technology.		
Spring, 2000	CS 7470 Mobile and Ubiquitous Computing Taught by Thad Starner and Elizabeth Mynatt	33

C. Individual Student Guidance

Ph.D. Student Thesis Committees

Gabriel Reyes (Georgia Tech)
2011 – 2017

Joanne Zucco (University of South Australia)
2015

III. SERVICE

A. Professional Activities

A.1. Conference Organizing Committee Activities

- Papers Co-Chair, *Mobile HCI*, Toulouse, France/Virtual, September 2021.
- Workshops Co-Chair, *UbiComp and ISWC*, Maui, HI, September 2017.
- Industry Co-Chair, *Mobile HCI*, Copenhagen, Denmark, August 2015.
- Sponsor Chair, *UbiComp and ISWC*, Seattle, WA, September 2014.
- General Chair, *Pervasive Computing*, San Francisco, CA, June 2011.
- General Chair, *International Symposium on Wearable Computing (ISWC)*, San Francisco, CA, June 2011.
- Technical Program Co-chair, *International Symposium on Wearable Computing (ISWC)*, Linz, Austria, September 2009.
- Workshop Co-Chair, *International Symposium on Wearable Computing (ISWC)*, Boston, MA, October 2007.
- Organizing Committee, *International Workshop on Smart Appliances and Wearable Computing (IWSAWC)*, Toronto, Canada, July 2007.
- Workshop Chair, *International Symposium on Wearable Computing (ISWC)*, Montroux, Switzerland, October 2006.
- Student Volunteer Chair and Publicity Co-Chair, *International Symposium on Wearable Computing (ISWC)*, White Plains, New York, October 2003.

A.2. Conference Program Committee Activities

- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Atlanta GA, Cambridge UK and Virtual. September 2022.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Virtual. September 2021.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Virtual. September 2020.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, London, UK. September 2019.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Singapore. October 2018.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Maui, HI. September 2017.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Heidelberg, Germany. September 2016.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Osaka, Japan. September 2015.

- Member of Program Committee, *User Interface Software and Technology (UIST)*, Honolulu, HI. October 2014.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Seattle, WA. September 2014.
- Member of Program Committee, *ACM SIGCHI*, Toronto, Canada. April 2014.
- Member of Program Committee, *User Interface Software and Technology (UIST)*, St. Andrews, UK. October 2013.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Zurich, Switzerland, September 2013.
- Member of Program Committee, *Mobile HCI*, San Francisco, CA. September 2012.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Newcastle, UK, June 2012.
- Member of Program Committee, *ACM SIGCHI*, Austin, TX. April 2012.
- Member of Program Committee *International Symposium on Wearable Computing (ISWC)*, San Francisco, CA, June 2011.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Seoul, Korea, October 2010.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Pittsburgh, PA, September 2008.
- Member of Program Committee, *ACM CHI Notes*, Florence, Italy, April 2008.
- Member of Program Committee, *International Symposium on Wearable Computing (ISWC)*, Boston, MA, October 2007.
- Member of Poster Committee, *User Interface Software and Technology (UIST)*, Montroux, Switzerland, October 2006.
- Member of Program Committee, Doctoral Consortium Committee *International Symposium on Wearable Computing (ISWC)*, Montroux, Switzerland, October 2006.
- Member of Program Committee, *International Workshop on Smart Appliances and Wearable Computing (IWSAWC)*, Lisbon, Portugal, July 2006.

A.3. Editorial and Reviewer Work for Technical Journals, Publishers and Funding Agencies

- CHI, UIST, ISWC, IMWUT, UbiComp, Siggraph, Pervasive, Mobile HCI, CSCW, MobiSys, IUI, ICMI, ITS, Interact, Context, IEEE CG&A, IUI, IEEE Pervasive, IEEE Intelligent Systems, HCI Journal, ToCHI, NSF.

IV. OTHER CONTRIBUTIONS

A. Seminar Presentations (Invited Papers and Talks at Meetings and Symposia)

- A.1.22. K. Lyons. “Challenges and Opportunities for Interacting with Wearables” Distinguished Speaker at Accenture. San Jose, CA. June 6, 2016.

- A.1.21. K. Lyons. “Building Interactive Wearable Systems” Invited talk at University of Tokyo. Tokyo, Japan. September 14, 2015.
- A.1.20. K. Lyons. “Building Interactive Wearable Systems” Invited talk at Technicolor. Los Altos, CA. April 24, 2015.
- A.1.19. K. Lyons. “Building Interactive Wearable Systems” Invited talk at FXPAL. Palo Alto, CA. February 10, 2015.
- A.1.18. K. Lyons. “Mobile & Beyond: Wearables go Mainstream.” Invited talk at GVVU Center Distinguished Alumnus Brown Bag. Atlanta, GA. August 28, 2014
- A.1.17. K. Lyons. “Building Interactive Wearable Systems” Invited talk at Yahoo Labs. Sunnyvale, CA. July 16, 2013.
- A.1.16. K. Lyons. “Lessons from DCC for Collocated System Design and Evaluation” invited talk at Mobile HCI 2011 Workshop “Designing and Evaluation Mobile Systems for Collocated Group Use Workshop” Stockholm, Sweden, August 30, 2011.
- A.1.15. K. Lyons. “Interacting with Composition of Mobile Displays”. Invited talk at Samsung, San Jose, CA. February 25, 2011.
- A.1.14. K. Lyons. “Interacting with a Mobile Computing Ensemble”. Invited talk at Georgia Tech. Atlanta, GA. April 8, 2010.
- A.1.13. K. Lyons. “Multi-display and Context Enabled Composition”. Invited talk at KTH. Stockholm, Sweden. September 2, 2009.
- A.1.12. K. Lyons. “Mobile Interaction for Everyday Use”. Invited talk at Stanford. Palo Alto, CA. July 24, 2008.
- A.1.11. K. Lyons. “Evaluation of Mobile Interaction Techniques for Computing On-the-Go.” Invited talk at Intel Research. Seattle, WA. March 27, 2007.
- A.1.10. K. Lyons. “Evaluation of Mobile Interaction Techniques for Computing On-the-Go.” Invited talk at Intel Research. Santa Clara, CA. March 21, 2007.
- A.1.9. K. Lyons. “Computing On-the-Go.” Invited talk at Intel Workshop and Forum on New User Interfaces for Ultra Mobile Devices. Santa Clara, Ca. February 20, 2007.
- A.1.8. K. Lyons. “Using Mobile Wireless Technology in Rehabilitation and Community Re-Integration of Individuals with Disabilities.” Invited talk at Touch the Future 2006 Assistive Technology and Transition Conference and 8th Georgia Workforce Conference. Athens, GA. October 31st, 2006.
- A.1.7. T. Starner and K. Lyons. “Overview of Wearable Computing Research and Challenges.” Invited lecture at Georgia State University. Atlanta, GA. February 21, 2006.
- A.1.6. K. Lyons. “Wearable Computing.” Invited talk at the GITA Southeast Chapter 12th Annual Conference. Marietta, GA. October 5, 2005.
- A.1.5. K. Lyons. “Improving Support of Conversations by Enhancing Mobile Computer Input.” Invited talk at Intel Research. Santa Clara, CA. May 3, 2005.
- A.1.4. K. Lyons. “Improving Support of Conversations by Enhancing Mobile Computer Input.” Invited talk at Intel Research. Seattle, WA. April 21, 2005.
- A.1.3. K. Lyons. “Wearable Computing Research and Assistive Technology.” Invited talk at the Wireless RERC. Atlanta, GA. March 10, 2005.

- A.1.2. K. Lyons and T. Starner. “Twiddler Typing: Text Entry for Mobile Phones.” Invited talk at Panasonic Wireless Design Center. Suwanee, GA. December 12, 2003.
- A.1.1. K. Lyons. “Wearable Computers: What is that and what is it used for?” Invited talk to UC Berkeley’s Group for User Interface Research. Berkeley, CA. July 12, 2002.