

KAYUR PATEL

101 Paul G. Allen Center
University of Washington
Seattle, WA 98195
kayur@cs.washington.edu

RESEARCH STATEMENT My research examines how to help programmers use machine learning. I am interested in understanding how programmers apply machine learning, creating new techniques that support the application of machine learning, and building and evaluating software development tools that embody effective techniques.

EDUCATION **PhD Student, Computer Science and Engineering**
University of Washington
Area: HCI, Machine Learning
Advisors: James Fogarty and James A. Landay
Thesis: *Lowering the Barrier to Applying Machine Learning*

MS, Computer Science and Engineering
University of Washington
June 2008
Area: HCI, Machine Learning
Qualifying Project: *Examining the Developer Adoption of Statistical Machine Learning*

MS, Computer Science
Stanford University
June 2005
Focus: AI, Machine Learning, Robotics

BS, Computer Science and Human Computer Interaction
Carnegie Mellon University
June 2003
Graduated Summa Cum Laude and with College Honors

HONORS Microsoft Research Graduate Fellowship 2009-2011
Best Paper Nomination at CHI 2009
National Defense Science and Engineering Fellowship, 2005 – 2008
Graduated Summa Cum Laude
College Honors from Carnegie Mellon University
Phi Beta Kappa Honor Society
Phi Kappa Phi Honor Society

PUBLICATIONS Available for download at: <http://www.cs.washington.edu/homes/kayur/>

CONFERENCE **Patel, K.**, Drucker, S.M., Fogarty, J., Kapoor, A., Tan, D.S. (2010). Using Multiple Models to Understand Data. *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI 2011)*, 1723-1728

Patel, K., Bancroft, N., Drucker, S., Fogarty, J., Ko, A., Landay, J.A. (2010). Gestalt: Integrated Support for Implementation and Analysis in Machine Learning Processes. *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2010)*, 37-46.

Hoffman, R., Amershi, S., **Patel, K.**, Wu, F., Fogarty, J., and Weld, D.S. (2009). Amplifying Community Content Creation with Mixed Initiative Information Extraction. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2009)*, 1849-1858.

Harada, S., Lester, J., **Patel, K.**, Saponas, T.S., Fogarty, J., Landay, J.A., and Wobbrock, J.O. (2008). VoiceLabel: Using Speech to Label Mobile Sensor Data. *Proceedings of the International Conference on Multimodal Interfaces (ICMI 2008)*, 69-76.

Patel, K., Fogarty, J., Landay, J.A., and Harrison, B. (2008). Examining Difficulties Software Developers Encounter in the Adoption of Statistical Machine Learning. *Proceedings of AAAI Conference on Artificial Intelligence (AAAI 2008), Nectar Track*, 1563-1566.

Weld, D.S., Wu, F., Adar, E., Amershi, S., Fogarty, J., Hoffmann, R., **Patel, K.**, and Skinner, M. (2008). Intelligence in Wikipedia. *Proceedings of AAAI Conference on Artificial Intelligence (AAAI 2008), Senior Papers Track*, 1609-1614.

Patel, K., Fogarty, J., Landay, J.A., and Harrison, B. (2008). Investigating Statistical Machine Learning as a Tool for Software Development. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2008)*, 667-676.

Patel, K., Bailenson, J.N., Hack-Jung, S., Diankov, R., and Bajcsy, R. (2006). The Effects of Fully Immersive Virtual Reality on the learning of physical tasks. *Proceedings of the 9th Annual International Workshop on Presence (PRESENCE 2006)*, 87-94.

Patel, K., Chen, M., Smith, I., and Landay, J.A. (2006). Personalizing Routes. *Proceedings of 19th annual ACM Symposium on User Interface Software and Technology (UIST 2006), Notes Track*, 187-190.

Bodic, P., Friedman, G., Biewald, L., Levine, H., Candea, G., **Patel, K.**, Tolle, G., Hui, J., Fox, A., I. Jordan, M., and Patterson, D. (2005). Combining Visualization and Statistical Analysis to Improve Operator Confidence and Efficiency for Failure Detection and Localization. *In Proceedings of the Second International Conference on Automatic Computing (ICAC 2005)*, 89-100.

Patel, K., Macklem, W., Thrun, S., and Montemerlo, M. (2005). Active Sensing for High-Speed Offroad Driving. *Proceedings of the 2005 IEEE International Conference on Robotics and Automation (ICRA 2005)*, 3162-3168.

JOURNAL Bailenson, J.N., **Patel, K.**, Nielsen, A., Bajcsy, R., Jung, S., and Kurillo, G. (2008). The Effect of Interactivity on Learning Physical Actions in Virtual Reality. *Media Psychology*.

Bailenson, J.N., Yee, N., **Patel, K.**, and Beall, A. C. (2008). Detecting Digital Chameleons. *Computers in Human Behavior*, Vol. 24, No. 1, 66-87.

**RESEARCH
EXPERIENCE**

Graduate Researcher, University of Washington **June 2005 – Present**
with James Fogarty, James Landay, Andrew Ko, and Steven Drucker

- Created an integrated development environment for machine learning.
with James Fogarty, James Landay, and Beverly Harrison
- Studied the difficulties developers face when applying machine learning.
with James Landay, Mike Chen, and Ian Smith
- Created an algorithm that provided landmark-based driving directions.

Research Intern, Microsoft Research, Seattle, WA **Sept 2009 – Dec 2009**
with Steve Drucker, Ashish Kapoor, Desney Tan, and James Fogarty

- Designed and developed a new method for filtering and sorting training data.

Research Intern, Microsoft Live Labs, Seattle, WA **Sept 2007 – Dec 2007**
with Steve Drucker, Mukund Narasimhan, and Paul Viola

- Developed a prototype interface to debug query classification systems.

Graduate Researcher, Stanford University **June 2004 – June 2005**
with Sebastian Thrun, Mike Montemerlo, and Walter Macklem

- Created a targeted sensing algorithm based on environmental information.
with Jeremy Bailenson and Ruzena Bajcsy
- Studied learning physical motions in fully immersive VR.

Undergrad Researcher, Carnegie Mellon University **June 2001 – Sept 2002**
with Alex Rudnicky, Jane Segal, and Dan Bohus

- Helped build and test wearable speech recognition system.

**TEACHING
EXPERIENCE**

CSE590K Research in Computer Science **Spring 2009**
University of Washington

with Eytan Adar

- Created course content, organized invited speakers.

CSE510 Advanced Topics in Human-Computer Interaction **Winter 2009**
University of Washington

with James Fogarty

- Graded homework and forum posts, held office hours.

CS221 Introduction to Artificial Intelligence **Autumn 2004**
Stanford University

with Andrew Ng

- Designed/wrote homework, designed/graded exams, led recitation section.

15-211 Fundamental Data Structures and Algorithms **Spring 2003**
Carnegie Mellon University

with Peter Lee, Ananda Gunawardena, and Klaus Sutner

- Designed/wrote homework, designed/graded exams, led recitation section.

15-111 Introduction to Programming **Fall 2002**
Carnegie Mellon University

with Mark Stehlik

- Designed/wrote homework, designed/graded exams, led recitation section.

- SERVICE** **Prospective Student Committee** **2006 – 2010**
UW CSE Department
Planned visit day events for prospective graduate students.
- Graduate Student Coordinator** **2008 – 2009**
UW CSE Department
Acted as the official liaison between the faculty and the graduate students.
- Graduate Student Senator** **2008 – 2009**
University of Washington, Seattle
Participated in discussions about issues relating to all aspects of student life.
- New Graduate Orientation Committee** **2006 – 2007**
UW CSE Department
Co-Chaired new graduate student orientation in 2006.
- CSE Holiday Student Skit Committee** **2005 – 2007**
UW CSE Department
Helped plan and run holiday skit.
- Paper Reviewer**
UbiComp2007, CHI2008, UIST2008, InfoVis2008, CHI2009, CHI2010, UIST2010, IUI2011, AAAI2011, CHI2011
- Student Volunteer**
CHI2008

REFERENCES

James Fogarty, Ph.D.
Associate Professor
Computer Science and Engineering
University of Washington, Seattle
Paul Allen Center 101
Box 352350
Seattle, WA 98195-2350
jfogarty@cs.washington.edu

James Landay, Ph.D.
Short-Dooley Professor
Computer Science and Engineering
University of Washington, Seattle
Paul Allen Center 101
Box 352350
Seattle, WA 98195-2350
landay@cs.washington.edu

Other references available upon request.