



Faculty Additions 2014

UW Computer Science & Engineering



UNIVERSITY of WASHINGTON



University of Washington Computer Science & Engineering New and Recent Faculty Hires

2014:

Alvin Cheung, Data Management, Programming Languages and Systems

Yejin Choi, Natural Language Processing

Franzi Roesner, Security and Privacy

Noah Smith, Natural Language Processing

Emina Torlak, Programming Languages and Software Engineering

Xi Wang, Systems, Programming Languages and Security

2013:

Maya Cakmak, Robotics and Human-Robot Interaction

Shayan Oveis Gharan, Theory of Computation

Matt Reynolds, Ultra Low Power Sensing and Computation

Zach Tatlock, Programming Languages and Software Engineering

2012:

Ali Farhadi, Computer Vision

Emily Fox (adjunct), Machine Learning

Shyam Gollakota, Networking and Wireless Systems

Carlos Guestrin, Machine Learning

Jeffrey Heer, Data Visualization and Human-Computer Interaction

Ira Kemelmacher-Shlizerman, Computer Vision

Ben Taskar, Machine Learning (deceased 2013)

Six new hires — on top of ten new hires in the preceding two years — reinforce UW Computer Science & Engineering's position among the very best programs in the nation, and establish leadership positions in several key areas of the field.

Complementing our recent game-changing hires in Machine Learning, "Big Data," Computer Vision, and other areas, this year's hires build upon existing strength to create a world-class Natural Language Processing Group at UW, and to provide outstanding new talent across already strong core areas of Systems, Security, Data Management, Programming Languages, and Software Engineering. These hires create enormous collaboration opportunities among the new hires themselves, with existing faculty, in the greater university, and with our many close colleagues at organizations such as Amazon, Google, Microsoft, the Allen Institute for Artificial Intelligence, and the Institute for Systems Biology that make Seattle an amazing place for computing research.

Located in one of the world's most vibrant high-tech regions, UW CSE is committed not only to leadership in core computer science, but also to leadership in research and education with direct impact on national and global challenges — challenges such as education, energy, biology, healthcare, transportation, scientific discovery, and the use of technology in developing regions. UW CSE has achieved great success and impact through activities that make technology better, and through activities motivated by how innovations are put to work.

Our recent growth, coupled with Seattle's growth as a dynamic center of creativity and innovation, make it a particularly exciting time for Computer Science & Engineering at University of Washington. We fully expect that it will only get better!



Hank Levy
Chairman and Wissner-Slivka Chair

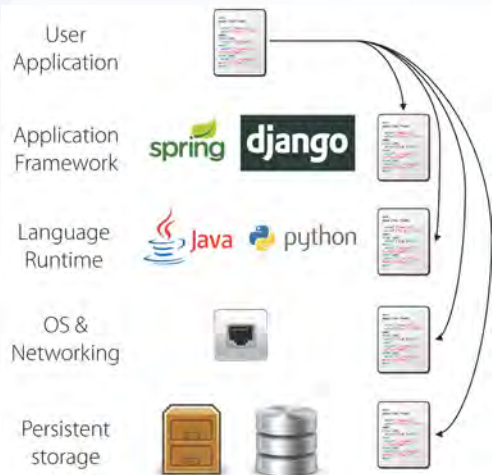


Alvin Cheung, Assistant Professor

Alvin Cheung will join UW Computer Science & Engineering in January 2015. He is currently finishing his Ph.D. in computer science at MIT, and has previously received his M.S. and B.S. degrees from Stanford University.

Alvin's research spans data management and programming systems. As the complexity of software systems increases, it becomes more and more difficult for developers to build systems that perform well, and to be able to reason about their end-to-end correctness. Alvin's research aims to help developers build, optimize, and deploy large-scale software systems. His thesis work focuses on *co-optimizing* data-intensive applications by examining the entire software stack, including the user application, the data storage engine, and the runtime system. His work has demonstrated multiple-order-of-magnitude speedups in real-world data-intensive applications.

Alvin is a recipient of an Intel Ph.D. Fellowship, an NDSEG Graduate Fellowship, and an NSF Graduate Fellowship. He received a best paper award from the *Conference on Innovative Data Systems Research (CIDR)* for his work on using program analysis and program synthesis to automatically split the user application across different layers of the software stack in order to achieve good performance.



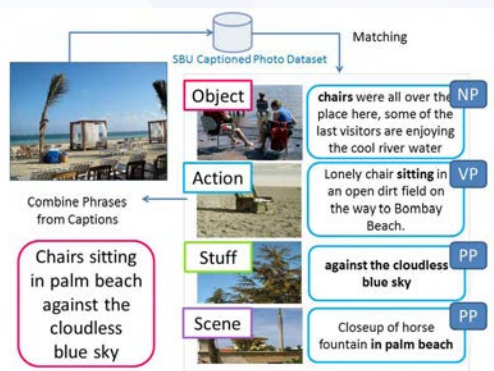


Yejin Choi, Assistant Professor

Yejin Choi, currently Assistant Professor in the Computer Science Department at SUNY Stony Brook, will join UW CSE in the fall. She completed her Ph.D. in Computer Science at Cornell University and her B.S. in Computer Science and Engineering at Seoul National University.

Combining statistical foundations in Natural Language Processing (NLP) research with large scale data analysis, Yejin's research seeks to broaden the spectrum of human language understanding that computers can do for us. Beyond the literal and denotational meanings, she aims to design statistical models that can understand the implied, contextual, and connotative meanings in everyday language use. Her recent work in this avenue includes detecting deceptive online reviews and predicting a novel's success. Her research holds both academic significance and practical impact and has been featured in the *New York Times*, *WNBC News*, *IEEE Spectrum Podcast*, *NPR*, and *CBS Radio*.

In addition, leading research efforts that combine NLP with computer vision, Yejin studied data-driven approaches to automatically captioning photographs, and designed statistical techniques to infer the natural conceptualization of object names in the world. Her pioneering research in this area was recognized by the 2013 David Marr Prize.





Franziska Roesner, Assistant Professor

Franziska (Franzi) Roesner completed her Ph.D. in Computer Science & Engineering at UW in June and will join the department this fall. She received her B.S. in Computer Science from UT Austin.

While new technologies benefit many aspects of our lives, they also bring new and serious security and privacy risks. Broadly, Franzi's research aims to understand and improve the security and privacy properties of modern and emerging technologies. Her work combines a strong focus on system design with a grounding in real security and privacy issues faced by the people who use these technologies. Franzi's thesis work studied and developed novel solutions in several technology domains, including third-party tracking on the web, permission granting for applications in modern operating systems, security for embedded third-party user interfaces, and privacy for emerging augmented reality technologies like Google Glass.

Most notably, her work on user-driven access control for smart phones won the Best Practical Paper Award at the *2012 IEEE Symposium on Security and Privacy*, and her web privacy tool ShareMeNot, which protects users from "personal" web trackers like the Facebook "Like" button, has recently been incorporated into Privacy Badger, a new tool created by the Electronic Frontier Foundation.

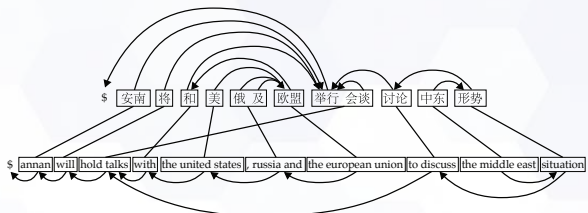




Noah Smith, Associate Professor

Noah Smith will join UW CSE in Autumn 2015. He is currently the Finmeccanica Associate Professor in the Language Technologies Institute at Carnegie Mellon's School of Computer Science. His Ph.D. is from Johns Hopkins University, where he was a Hertz Foundation Fellow, and his undergraduate degrees in Computer Science and Linguistics are from the University of Maryland.

Noah's research focuses on algorithms for processing text. He has made contributions to core problems of natural language processing: syntactic and semantic parsing, morphological analysis, and inferring linguistic structure using unsupervised machine learning. He also works on applications, including machine translation and text analysis for the humanities and social sciences. Recent contributions include methods for measuring ideological cueing in political text and geographical diffusion of new words on social media.



references: annan to hold talks with us , russia and eu over situation in middle east
annan will discuss middle east situation with u.s. , russia and european union
annan to discuss mideast situation with us , russia and eu
annan to meeting the us , russia and eu to discuss middle east crisis

Noah publishes regularly in the top computational linguistics and machine learning journals and conferences. In 2009 he was awarded a best paper award by the Association for Computational Linguistics. His work has been featured in the *New York Times*, *Washington Post*, *New Scientist*, *Time*, and on *NPR*, *CBC*, and *BBC*.



Emina Torlak, Assistant Professor

Emina Torlak will join UW CSE in the fall. She received her B.Sc. (2003), M.Eng. (2004) and Ph.D. (2009) from MIT. She subsequently worked at IBM Research, LogicBlox, and most recently as a research scientist at UC Berkeley.

Emina works at the intersection of software engineering, formal methods, and programming languages. Her research focuses on automating and improving the programming process; in particular, she is an expert in using SAT-solvers and constraint languages for automatic reasoning about software. Emina has applied her expertise broadly, from test generation for databases to memory consistency models. She is the creator of Kodkod, an efficient SAT-based solver that has been used in over 70 automated tools for program verification, debugging, and synthesis.

Her recent work relates to integrating constraint solvers into programming languages to support automatic testing, verification, and synthesis — making programming a collaboration between humans and machines.

Rosette is a new kind of host language, designed for easy creation of domain-specific languages

(DSLs) that are equipped with solver-based tools. These Solver-Aided DSLs (SDSLs) use Rosette's symbolic virtual machine (SVM) to

automate hard programming tasks, including verification, debugging, synthesis, and programming with angelic oracles. The SVM works by compiling SDSL programs to logical constraints understood by SMT solvers, and then translating the solver's output to counterexamples (in the case of verification), traces (in the case of angelic execution), or code snippets (in the case of synthesis and debugging).

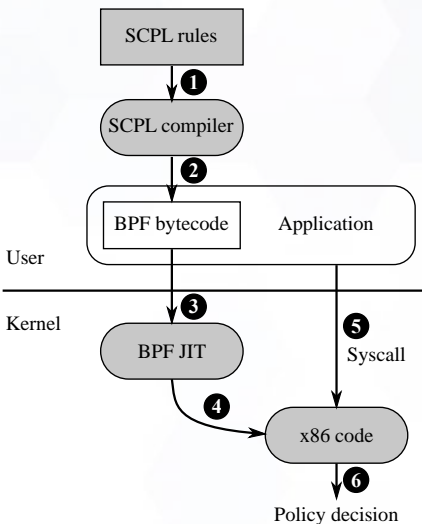
ROSETTE



Xi Wang, Assistant Professor

Xi Wang completed his Ph.D. at MIT over the summer and will join UW CSE in the fall. He received Bachelors and Masters degrees in Computer Science from Tsinghua University in 2005 and 2008, respectively.

Xi's research interests are in building secure and reliable systems. His work intersects operating systems, computer security, and programming languages. His paper on the analysis of security compromises resulting from compiler optimizations won a best paper award at *ACM SOSP 2013*. The C++ standards committee is currently considering revising the language specification in response to this work. His research on systems security has contributed to the finding and fixing of more than 300 defects and vulnerabilities in real-world software, ranging from Android/iOS to web services, and has produced practical bug-finding tools used by companies such as Dropbox, Cloudera, and Intel.



At a high level, Xi's goal is exploring systems abstractions to improve all levels of the trusted computing base. His recent work focuses on securing operating systems and applications through auditing and verification.



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