Kate L. Harrison

http://www.kateharrison.net   harriska@eecs.berkeley.edu
http://github.com/kate-harrison/

Education

University of California, Berkeley – Berkeley, CA

PhD, Electrical Engineering and Computer Sciences   *May 2015*
    Thesis: A quantitative approach to wireless spectrum regulation

MS, Electrical Engineering and Computer Sciences   *Dec. 2011*
    Thesis: Cognitive radios in the TV whitespaces: challenges and opportunities
    Advisor: Professor Anant Sahai

Oregon State University – Corvallis, OR

BS, Electrical and Computer Engineering   *June 2009*
    Option: Signals, Systems, and Communications

BS, Mathematics   *June 2009*
GPA: 3.95/4.0, Summa Cum Laude

Work experience

Google (via Adecco) – Mountain View, California, USA   *Feb. '14 - present*
    Supervisor: Andy Lee
    – Project cannot be discussed due to the non-disclosure agreement

Head Graduate Student Instructor - Berkeley, CA, USA   *Jan. '14 - May '14*
    CS 70 (Discrete Math and Probability) with Anant Sahai at UC Berkeley   *Jan. '13 - May '13*
    – Created assignments, solutions; led discussion; held "homework parties"; graded exams (2013)
    – 2013: Managed 7 other GSIs and 14 readers; 450 students enrolled (*leadership experience*)
    – 2014: Managed 11 other GSIs and 25 readers; ∼550 students enrolled
    – Organizational lead for the class: led meetings, managed scheduling, etc.
    – Many students called it "the best-run class at Berkeley"

Graduate Student Researcher - Berkeley, CA, USA   *Aug. '09 - May '15*
    Advisor: Anant Sahai at UC Berkeley
    – Performed data-driven analysis of dynamic spectrum sharing opportunity, regulations
    – Created, maintained two large code bases (Matlab and Python) used by research community
      (see github.com/kate-harrison/whitespace-eval, github.com/kate-harrison/west)
    – Published nine peer-reviewed papers (two award-winning); see second page
    – Presented original work at four IEEE conferences

Tarana Wireless – Berkeley, California, USA   *June '12 - Jan. '14*
    Supervisor: Sergiu Nedevschi
    – Built and maintained analysis and visualization tools for tracking performance statistics
    – Product used daily by most internal engineers for rapid debugging
    – Product featured in demonstrations to potential customers
    – Tools used: Python, matplotlib, Qt (PySide), protobuf
    – Learned Python while starting the project

Rheinish-Westphalian Technical University – Aachen, Germany   *June '08 - Sept. '08*
    Supervisor: Tobias Heer
    – Research internship doing network programming in C, bash scripting

TekBots Teaching Assistant – Corvallis, Oregon, USA   *Sept. '07 - June '09*
    Supervisor: Don Heer   *Jan. '07 - March '07*
    – Helped troubleshoot student projects (PCB assembly and breadboard designs)
    – Graded homework; supervised lab sessions

Relevant skills

– **Technical skills:** Matlab, Python, C, C++, git, Qt, matplotlib, LaTeX, protobuf, HTML
– **Languages:** English, Spanish (working proficiency), German (beginner)
– **Interpersonal skills:** efficient, highly organized, forward-thinking, context-aware, quick learner

Publications

– **Kate Harrison**, "*A quantitative approach to wireless spectrum regulation.*" Doctoral dissertation, University of California, Berkeley, 2015.

– **Kate Harrison** and Anant Sahai, "*A more general whitespace architecture: refactoring the master-client paradigm.*" To appear at the IEEE International Conference on Communications (ICC) 2015, London, UK.

– Vidya Muthukumar, Angel Daruna, Vijay Kamble, **Kate Harrison**, and Anant Sahai, "*Whitespaces after the USA's TV incentive auction: a spectrum reallocation case study.*" To appear at the IEEE International Conference on Communications (ICC) 2015, London, UK.

– **Kate Harrison** and Anant Sahai, "*Allowing sensing as a supplement: an approach to the weakly-localized whitespace device problem.*" 2014 IEEE Symposium on Dynamic Spectrum Access Networks, Mclean, VA, USA.

– Shaddi Hasan, Kurtis Heimerl, **Kate Harrison**, Kashif Ali, Sean Roberts, Anant Sahai, Eric Brewer, "*GSM Whitespaces: An Opportunity for Rural Cellular Service.*" 2014 IEEE Symposium on Dynamic Spectrum Access Networks, Mclean, VA, USA. [**best paper**]

– **Kate Harrison** and Anant Sahai, "*Seeing the bigger picture: context-aware regulations.*" 2012 IEEE Symposium on Dynamic Spectrum Access Networks, Bellevue, WA, USA. [**best paper**]

– Kristen Woyach, **Kate Harrison**, Gireeja Ranade, and Anant Sahai, "*Comments on unknown channels.*" 2012 Information Theory Workshop, Lausanne, Switzerland.

– **Kate Harrison**, "*Cognitive radios in the TV whitespaces: challenges and opportunities.*" Master's thesis, University of California, Berkeley, 2011.

– **Kate Harrison** and Anant Sahai, "*Potential collapse of whitespaces and the prospect for a universal power rule.*" 2011 IEEE Symposium on Dynamic Spectrum Access Networks, Aachen, Germany.

– **Kate Harrison**, Mubaraq Mishra, and Anant Sahai, "*How much white-space capacity is there?*" 2010 IEEE Symposium on Dynamic Spectrum Access Networks, Singapore.

– Anant Sahai, Kristen Woyach, **Kate Harrison**, Hari Palaiyanur, and Rahul Tandra, "*Towards "A Theory of Spectrum Zoning,""* Allerton, October 2009.

– Research website: http://www.kateharrison.net

Academic awards

Partial list:

– UC Berkeley EECS Distinguished Student Teaching Award 2015

– IEEE DySpAN 2014 Best Student Paper Award

– IEEE DySpAN 2012 Best Student Paper Award

– National Science Foundation Graduate Research Fellowship

– UC Berkeley Academic Support

– UC Berkeley EECS Chair's Excellence Award

– Phi Kappa Phi Award of Excellence (national)

– Oregon State University Presidential Scholarship