Yasha S. Iravantchi

Contact Information

29 Oxford St.
Cambridge, MA 02138 yasha@seas.harvard.edu

Research Interests Fabrication, wearables, ubiquitous computing, signal processing, and biosignals.

Education

Harvard University, Cambridge, MA — May 2014

S.B., Engineering Sciences (Tracks: Electrical Engineering/Biomedical Engineering)

Professional Experience

Design Specialist in Electrical Engineering — June 2014 to present
Active Learning Labs, Harvard University SEAS
Cambridge, MA

Product Design and Engineering Intern — Summers 2009-2012
Design Catapult, Inc.
Fountain Valley, CA

Research Experience

Research Affiliate — June 2013 to present
Intelligent Interactive Systems Group,
Harvard University SEAS
Supervisor: Prof. Krzysztof Z. Gajos

Publications

1. Sunyoung Kim, **Yasha Iravantchi**, Krzysztof Z. Gajos, and Barbara Grosz. SwellFit: a Wearable Sensor for Patients with Congestive Heart Failure. In *Proceedings of the Workshop on Interactive Systems in Healthcare (WISH) 2016*, 2016.

2. Sunyoung Kim, **Yasha Iravantchi**, Krzysztof Z. Gajos, and Barbara Grosz. Exploring Opportunities for Social Infrastructure in Congestive Heart Failure Management. In *Proceedings of the CSCW 2015 workshop on Moving Beyond e-Health and the Quantified Self*, 2015.

Presentations and Talks

How to Measure Things (ES 100 Senior Capstone Lecture)
- Harvard Active Learning Labs, Cambridge, MA — Oct 2016

How to Make Your Own Wearable (Workshop)
- Harvard Active Learning Labs, Cambridge, MA — July 2016

"Labs in the Wild": Teaching Signal Processing Using Wearables and Jupyter Notebooks in the Cloud (Talk)
- SciPy Conference, Austin, TX — July 2016

Wearable Signal Processing Using Docker Notebook Containers on AWS (Talk)
- JupyterDays Boston, Cambridge, MA — Mar 2016

How to Measure Things (ES 100 Senior Capstone Lecture)
- Harvard Active Learning Labs, Cambridge, MA — Oct 2015

EE Zero-To-Sixty Workshop (Harvard J-TERM Workshop)
- Harvard Active Learning Labs, Cambridge, MA — Jan 2015

Data Measurement and Analysis (ES 100 Senior Capstone Lecture)
- Harvard Active Learning Labs, Cambridge, MA — Oct 2014

Teaching Experience

Course Staff — 2014-15, 2015-16, 2016-17
ES 96 - Engineering Problem Solving and Design Project
Instructor: Varies by semester
School of Engineering and Applied Sciences, Harvard University

Course Staff — 2014-15, 2015-16, 2016-17
ES 100 - Engineering Design Projects
Instructor: Prof. Rob Wood
School of Engineering and Applied Sciences, Harvard University

Teaching Fellow — Spring 2016, Fall 2016

ES 155 - Biological Signal Processing
Instructor: Prof. Demba Ba
School of Engineering and Applied Sciences, Harvard University

Course Assistant Spring 2016
ES 151 - Applied Electromagnetism
Instructor: Mohamed Abouzahra, Ph.D. and Joseph Usoff, Ph.D.
School of Engineering and Applied Sciences, Harvard University

Teaching Fellow Springs 2013–14
ES 50 - Introduction to Electrical Engineering
Instructor: Profs. Marko Loncar and Evelyn Hu
School of Engineering and Applied Sciences, Harvard University

Teaching Fellow Fall 2013
BE 110 - Physiological Systems Analysis
Instructor: Prof. Daniel Merfeld
School of Engineering and Applied Sciences, Harvard University

Undergraduate Research Projects

1. *Robust Eye BlinkBased Selection Technique for Gaze-Based Interaction*
   Advisor: Prof. Krzysztof Gajos (Harvard SEAS)
2. *Using EEG Noise as a Means for Adding Robustness to Eye Gaze Interfaces*
   Advisor: Prof. Krzysztof Gajos (Harvard SEAS)
3. *PCA-Based Face Detection using FOSCAM IP Camera and Facebook*
   Advisor: Prof. Jim Waldo (Harvard SEAS)
4. *LightningVolt: A bicycle-based mobile device charger*
   Advisor: Prof. Gu-Yeon Wei (Harvard SEAS)

References

Krzysztof Z. Gajos
Professor
Intelligent Interactive Systems Group E-mail: kgajos@seas.harvard.edu
Harvard University SEAS

Anas Chalah
Executive Director of Active Learning
School of Engineering and Applied Sciences E-mail: achalah@seas.harvard.edu
Harvard University

Sunyoung Kim
Assistant Professor
School of Communication and Information E-mail: sunyoungkim@rutgers.edu
Rutgers University

Hardware and Software Skills

Engineering Hardware:
Arduino, Raspberry Pi, BeagleBone, Neurosky MindWave, OpenEEG, Google Glass, Android, GazePoint EyeTracker, Empatica E4, EE Lab Stack (e.g. Oscilloscope, Function Generator)

Engineering Software:
SolidWorks, Matlab/Simulink, LabView, Eagle, OpenCV, Open-Vibe, iPython/Jupyter

Languages

Computer Languages:
C, Matlab, LaTeX, HTML, CSS, PHP, JavaScript, Python

Human Languages:
English (Native), Persian (Native), Spanish (Fluent)