# Paroma Varma

## Curriculum Vitae

## Research Interests

Signal Processing, Computational Imaging, Biological Imaging

## Education

**Doctor of Philosophy**, *Electrical Engineering*, Stanford University, Stanford, CA.

2015 **Bachelor of Science**, *Electrical Engineering and Computer Science*, University of California at Berkeley, Berkeley, CA.

## Awards

National Science Foundation Graduate Research Fellowship

Stanford Graduate Research Fellowship

Arthur M. Hopkin Award for High Academic Achievement

## Research Experience

### Computational Imaging Lab, *Advisor: Laura Waller*

- Estimated layout of LED array to improve calibration using stack of out-of-focus images
- Utilized non-linear least squares and iterative phase retrieval to extract phase and illumination source from partially coherent defocus images
- Adapted blind deconvolution algorithm to improve depth of focus in digital holography

### Helen Wills Neuroscience Institute, *Advisor: Robert Knight*

- Developing algorithm for automated identification of neural oscillatory components for various forms of electrophysiological data
- Examined spatio-temporal dynamics of decision making in the pre-frontal cortex using (ECoG)

## Teaching and Mentoring Experience

### TA for EE16A, Designing Devices and Systems

- Helped develop course material and lab-based projects for pilot offering of the class
- Taught weekly sections and labs, designed homework and discussion problems

### TA for EE20N, Signals and Systems

- Taught weekly sections and labs

### EECS Peer Advisor

- Held weekly drop-in hours for academic and policy advising

## Industry Experience

### Tablet and Netbooks Group Intern, Intel Corporation

- Developed algorithm to adjust camera's colorspace to better represent true color values
- Created internal testing tool to analyze image colors from tablet cameras

### Business Intelligence Intern, GAP Inc.

- Used Selenium and Cucumber for automated testing of web-based reporting software (Microstrategy)
- Wrote scripts to solve issue regarding Microstrategy reports timing out

## Abstracts, Presentations, and Publications

2015 J. Zhong, P. Varma, L. Tian, L. Waller. Source Shape Estimation in Partially Coherent Phase Imaging with Defocused Intensity. *Imaging and Applied Optics Congress*, Arlington, Virginia

2015 Z. Phillips, G. Gunjala, P. Varma, J. Zhong, L. Waller. Design of a Domed LED Illuminator for High-Angle Computational Illumination. *Imaging and Applied Optics Congress*, Arlington, Virginia

2015 L. Waller, L. Tian, J. Zhong, P. Varma. Phase Microscopy and 3D Imaging with Partially Coherent Light. *OSA Technical Digest (online)*

2014 M. Haller, P. Varma, T. Noto, R.T. Knight, A.Y. Shestyuk, B. Voytek. Automated "Spectral Fingerprinting" of Electrophysiological Oscillations. *Society for Neuroscience*, Washington DC

2014 P. Varma, D. Shuldman, L. Waller. Improving Depth Resolution in Digital Holography through Blind Deconvolution. *National Science Foundation REU*, UC Berkeley

2014 M. Haller, P. Varma, L.M. Rosenberg, N.E. Crone, E.F. Chang, J. Parvizi, R.T. Knight, A.Y. Shestyuk. Temporally Sustained Activity in Lateral Prefrontal Cortex Supports Decision Making. *International Conference on Cognitive Neuroscience*, Brisbane, Australia

2014 M. Haller, L.M. Rosenberg , P. Varma, N.E. Crone, E.F. Chang, J. Parvizi, R.T. Knight, A.Y. Shestyuk. High Gamma Duration in Human Prefrontal Cortex Predicts Decision Time. *International Neuropsychological Society*, Jerusalem, Israel