Praveen Venkatesh

Ph.D. Candidate
Dept. of Electrical & Computer Engineering
Carnegie Mellon University

EDUCATION

Program	Institution	CGPA	Years
Ph.D., Electrical & Computer Engineering	Carnegie Mellon University Pittsburgh, PA	3.89	Fall 2014 – 2019 *(expected)*
B.Tech (Honors), Electrical Engineering (minor in Physics)	Indian Institute of Technology Madras Chennai, India	9.11	2010 – 2014

PUBLICATIONS

Journal papers

- Amanda Robinson, **Praveen Venkatesh**, Matthew Boring, Michael Tarr, Pulkit Grover, Marlene Behrmann
  "Very High Density EEG Elucidates Spatiotemporal Aspects of Early Visual Processing"
  Scientific Reports, November 2017

- Pulkit Grover, **Praveen Venkatesh**
  "An Information-theoretic View of EEG Sensing"
  Proceedings of the IEEE, February 2017

Conference papers

- **Praveen Venkatesh**, Pulkit Grover
  "Lower Bounds on the Minimax Risk for the Source Localization Problem"
  International Symposium on Information Theory (ISIT), June 2017

- **Praveen Venkatesh**, Pulkit Grover
  "Is the Direction of Greater Granger Causal Influence the Same as the Direction of Information Flow?"
  Allerton Conference on Communication, Control and Computing, September 2015

- Pulkit Grover, Jeffrey A Weldon, Shawn K Kelly, **Praveen Venkatesh**, Haewon Jeong
  "An Information-theoretic Technique for Harnessing Attenuation of High Spatial Frequencies to Design Ultra-High-Density EEG"
  Allerton Conference on Communication, Control and Computing, September 2015

Conference abstracts

- Ritesh Kumar, **Praveen Venkatesh**, Rui Sun, Gayathri Mohankumar, Arun Antony, Mark Richardson, Pulkit Grover
  "Ultra-high-density scalp EEG outperforms localized invasive ECoG grids in inferring depth of seizure foci"
  (submitted)

- Rui Sun, Pulkit Grover, Rudina Morina, Marie Bremner, **Praveen Venkatesh**, Anto Bagic, Mark Richardson, Jullie Pan, Alexandra Urban, Naoir Zaher, Arun Antony
  "Analysis of cortical stimulation data to localize intracranial electrodes using simultaneous scalp and stereo EEG recordings"
  American Epilepsy Society annual meeting, December 2017

- **Praveen Venkatesh**, Ashwati Krishnan, Jeffrey Weldon, Shawn Kelly, Pulkit Grover
  "Ultra-resolution Subdermal EEG: Long-term Minimally-invasive Brain Monitoring"
  SfN Neuroscience, November 2017

- **Praveen Venkatesh**, Pulkit Grover
  "High Density EEG: Information-theoretic Limits and Algorithms"
  International Symposium on Information Theory (ISIT), Recent Results, June 2017

- Alireza Chamanzar, Shilpa George, **Praveen Venkatesh**, Wanqiao Ding, Pulkit Grover
  "Systematic and Automated Algorithms for Detecting Cortical Spreading Depolarizations Using EEG and ECoG to Improve TBI Diagnosis and Treatment"
  12th World Conference on Brain Injury, March 2017

- **Praveen Venkatesh**, Wanqiao Ding, Pulkit Grover
  "Data Processing for Reliable Detection of Cortical Spreading Depolarizations Using High-density EEG"
  American Epilepsy Society annual meeting, December 2016

- **Praveen Venkatesh**, Pulkit Grover
  "Is the Direction of Greater Granger Causal Influence the Same as the Direction of Information Flow?"
  SfN Neuroscience, October 2015

AWARDS

- A recipient of the Carnegie Institute of Technology Dean's Fellowship [2014-15]
- A recipient of the Henry L. Hillman Presidential Fellowship [2015-16]
- A recipient of the Dowd Fellowship from the College of Engineering at Carnegie Mellon university [2016-17]
- A recipient of the CMLH Fellowship in Digital Health from the Center for Machine Learning and Health at Carnegie Mellon University [2017-18]

TEACHING

At Carnegie Mellon University

- Teaching Assistant and Co-instructor for *18-898: Introduction to Data Science with Applications to Clinical Neural Data* [Spring, 2017]
  - Helped design the course curriculum and homework assignments
  - Taught several lectures on statistics and source localization
  - Worked closely with students on designing and implementing course projects in collaboration with clinicians
- Teaching Assistant for *18-290: Signals and Systems* [Spring, 2015]

At the Indian Institute of Technology, Madras

- Teaching Assistant for *EE4371: Introduction to Data Structures and Algorithms* [Spring, 2014]

RELEVANT COURSEWORK (CMU)

- Real Analysis
- Lebesgue Integration
- Neural Data Analysis
- Information Flows: Communication, Computational and Neuronal
- Estimation, Detection and Identification
- Intermediate Statistics
- Compressive Sensing and Sparse Representations
- Information Theory
- Error Control Coding
- Convex Optimization
- Information Processing and Learning