

Madhavi Rajiv

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Education

Duke University, Durham, North Carolina

Bachelor of Science in Electrical and Computer Engineering (Concentration in Signal Processing)

Graduated May 2019 Magna Cum Laude GPA : 3.82/4.0

Relevant Coursework- Probability, Signals and Systems, Microelectronic Circuits and Devices, Computer Architecture, Digital Signal Processing, Software Design and Implementation, Random Signals and Noise, Linear Control Systems, Statistical Learning, Introduction to Robotics and Automation

University of Southern California, Los Angeles, California

PhD Program in Electrical and Computer Engineering (2019- now)

GPA : 3.85/4.0

Relevant Coursework- Probability, Linear Algebra, Estimation Theory, Random Processes, Information Theory, Real Analysis, Optimization

Awards

- Dean's List at Duke University for 7 semesters
- Charles Ernest Seager Memorial Award for outstanding undergraduate research projects and presentations (May 2019)
- USC Annenberg Fellowship

Experience

Research in Professor Urbashi Mitra's Lab (September 2019 – now)

- Working on blind channel estimation with applications in privacy in communications

Writing Consultant at the Duke Thompson Writing Center (August 2018 – May 2019)

- Provide consultation services for student writers of all backgrounds and levels, including graduate students
- Work with students on research papers, application essays, and any other writing assignments they may have

Teaching Assistant for Fundamentals of Digital Signal Processing (August 2018 – December 2018)

- Hold office hours in order to help students understand concepts and problem solving techniques
- Grade homework assignments

Pratt Fellows Research Program in the lab of Dr. Leslie Collins (January 2017– May 2019)

- Worked on attenuating cochlear implant artifact in EEG recordings
- Used EEGLAB, a MATLAB toolbox, in order to analyze and process EEG recordings
- Presented research to faculty and students at Duke ECE Independent Study Poster Sessions
- Presented research to a faculty panel in order to graduate with distinction

Summer Research Internship at UC, San Diego in the lab of Dr. Juan Carlos del Alamo (May – August 2017)

- Presented research at UCSD Undergraduate Summer Research Conference
- Implemented machine learning clustering algorithms in order to distinguish between healthy hearts and hearts suffering from dilated cardiomyopathy

Embedded Writing Consultant for Duke class on Engineering Design and Communication (September 2017 – December 2017)

- Consult student design teams on writing technical memos documenting their design process
- Work with professors to determine strategies to improve student writing

Scientific Social Network Analysis Project – Bass Connections (Fall Semester 2016)

- Wrote R scripts differentiating authors with the same name by using metadata from their papers

Teaching Assistant for Computational Methods in Engineering at Duke University (Fall Semester 2016)

- Tutored students on the use of MATLAB for data analysis

Environmental Engineering Project in Honduras for Duke Engineers for International Development (May – July 2016)

- Worked with a 10-person team to design a water filtration system throughout a town in Honduras
- Built out the system while shifting the design to accommodate environmental variables

Activities

Duke IEEE

- Participated on a team competing at the IEEE Southeast Con 2017
- Designed and 3D printed part of a robot which aimed projectiles at a target

Females Excelling More in Math and Science

- Created interactive science demos for elementary school girls in order to build interest in STEM

Skills

Java, MATLAB, Intermediate Spanish, Software Design, Written Communication

Publications

M. Rajiv and U. Mitra, "Securing BMOZ Signaling: A Two Layer Artificial Noise Injection Scheme," *2022 IEEE 23rd International Workshop on Signal Processing Advances in Wireless Communication (SPAWC)*, 2022, pp. 1-5, doi: 10.1109/SPAWC51304.2022.9833976.