

Kavya Puthuveetil

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Education

Virginia Commonwealth University (VCU), Richmond, VA

Fall 2018 – Spring 2022

Bachelor of Science in Biomedical Engineering, Minor in Mathematics

GPA: 4.0/4.0

Relevant Experience

Summer Undergraduate Research Experience (SURE) REU in Robotics, Healthcare Robotics Lab, Georgia Tech 2021

Advised by Zackory Erickson and Charles C. Kemp

Investigated autonomous bedding manipulation around people laying supine in bed

Presented reinforcement learning and supervised learning approaches, implemented using RLLib and Keras respectively, to bedding manipulation in simulation, implemented in Assistive Gym

Transferred simulation-trained bedding manipulation models to the Stretch RE-1 mobile manipulator, controlled via ROS

Undergraduate Researcher, Advanced Signal Processing in Engineering and Neuroscience Lab, VCU 2019 – 2021

Advised by Dean Krusienski

Developed a MATLAB application to archive and synchronize data streams from multiple monitoring devices, including transcranial doppler (TCD), near-infrared spectroscopy (fNIRS), hemodynamics, used during pediatric cardiac surgery

Student Researcher, Soft Functional Materials Lab, VCU

2016 – 2019

Advised by Christina Tang

Developed a low-cost device programmed in Python for shear force based controlled nanofiber fabrication and deposition

Investigated the effect of polymer solution characteristics on fiber formation using the shear force spinning technique in three polymer systems via rheology, SEM image analysis, and goniometry

Honors and Awards

Best Global Health Hack - Abt Associates, Technica

2020

One of three winners out of 29 submissions in the Global Health category at the world's largest all-women and non-binary hackathon

In a team of three, developed a web application to help users evaluate the credibility of reproductive health information found online

Best Education Hack - Bloomberg, Technica

2019

Winner out of 49 submissions in the Education category at the world's largest all-women and non-binary hackathon

In a team of three, developed a web application to help K-12 students find/create STEM programs in their area

Wright Engineering Access Scholarship

2020-2022

Provost Merit Scholarship

2018-2022

Qimonda Endowed Scholarship

2018-2020

Dean's List, VCU

6 semesters

Outreach

FIRST LEGO League, Referee, Robot Design Judge, Head Referee

2016-2021

FIRST Robotics Competition Mentor, Maggie L. Walker Governor's School

2018-2020

Publications

Preprint Journals

Bodies Uncovered: Learning to Manipulate Real Blankets Around People via Physics Simulations

arXiv preprint arXiv:2109.04930, 2021

Kavya Puthuveetil, Charles C. Kemp, and Zackory Erickson

Preprint Book Chapter

Brain-controlled Assistive Robotics and Prostheses

Robotics in Physical Medicine and Rehabilitation, 1st edition, 2021

Kavya Puthuveetil and Dean Krusienski

Conferences

Development of an application for real-time acquisition and synchronization of data from operative patient monitoring instruments

Society for Neuroscience (SfN) Global Connectome, 2021 (Abstract submission and oral poster presentation)

Kavya Puthuveetil, Archana Venkatesan, Raymond Hang, and Dean J. Krusienski

Peer Reviewed Journals

Shear Force Fiber Spinning: Process Parameter and Polymer Solution Property Considerations

Polymers, 2019

Arzan C. Dotivala, **Kavya Puthuveetil**, and Christina Tang