Shivani Bhakta

+1 (323) 548-5818 bhakta.shivani@gmail.com shivanibhakta bhaktashivani

EDUCATION

University of California, San Diego

M.S Electrical Engineering *(Intelligent Systems, Robotics & Controls)* ***Sep 2020 – Dec 2022***

B.S Electrical Engineering ***Sep 2016 – Sep 2020***

SKILLS

Languages: Python, MATLAB, C, Java

Technologies/Frameworks: Git, Raspberry Pi, AWS, Matplotlib, Scikit, TensorFlow, PyTorch, Pandas, OpenCV

Soft Skills: Leadership, Project Management, Organization, Public Speaking, Communication, Teamwork

Teaching: Intro to Python • Interaction Design • Intro to Analog Design

RELEVANT COURSEWORK

Sensing & Estimation • Planning & Learning • Search & Optimization • Reinforcement Learning • Introduction to Visual Learning • Random Processes • Statistical Learning • Machine Learning • Neural Networks/Deep Learning • Programming for Data Analysis • The Art of Product Engineering • Linear & Non-Linear Optimization

WORK EXPERIENCE

Co-Founder | Stasis, LLC (Smart insole for gait correction) **March 2019 – Present**

UC San Diego Design Competition - popularity prize winner

UC San Diego Innovation Expo 2021 - third place

Non-Provisional Utility Patent Pending [2]

- Blueprinted smart insole using custom pressure sensor (piezoelectric material - patent pending) and Inertial measurement unit to be able to collect data. Once the wearable prototype is ready, it will be used to collect data from the test users to pre-process it for our AI model
- Designed iOS app to assist professionals in creating therapy plan based on patient gait
- Interviewed 50 patients and medical professionals to develop human-centric design for insole

BLUBLE [1] | Research Intern @ WCSNG, UC San Diego **March – Sep 2020**

- Collected BLE signal (RSSI) data and used k-means, SVM, gaussian mixture model analysis, spectral clustering and other ML algorithms to classify the Bluetooth signals by transmitter-receiver distance. We started with simple linear classifiers on raw RSSI values and progressed towards more complex ones as more data was available.
- Devised contact tracking app for COVID-19 using Bluetooth signals to collect data and contract trace for preventing the spread of the disease.
- BluBLE was the first to use crowdsourced data to train and iteratively improve the classifier (gained up to 80% accuracy)

PROJECTS

Grand PrIEEE: Line Following Robot | IEEE **October 2018 – May 2019**

- Developed a motor driver circuit, and PCB design used to run the car
- Composed a PID control Algorithm to follow the line using line scan camera on Arduino mega microcontroller

Walking Buddy (First Place) | IEEE **Jan 2018 – March 2018**

- Built a smart cane, for individuals who are sight impaired, that detects any object in front of the cane using ultrasonic sound sensors and notifies them through haptic feedback
- Programmed Arduino to make a buzzing sound to notify the people around if the user has fallen

Patent & Publication

[1] Arun, A., Gupta, A., Bhatka, S., Komatineni, S., and Bharadia, D. *BluBLE, Space-Time Social Distancing to Monitor the Spread of COVID-19: Poster Abstract*. Association for Computing Machinery, New York, NY, USA, 2020, p. 750–751.

[2] Reicher, M., Patel, R., Jain, T., Komatineni, S., Bhakta, S., Hernandez, A., and Levy, J. Physical balance training system using foot sensors, real-time feedback, artificial intelligence, and optionally other body sensors, Pending.