TOSHIKA FEGADE
Philadelphia,PA,19104 | Ph. No.:+1-484-862-2927 | Email: fegadetoshika@gmail.com |
LinkedIn: linkedin.com/in/toshikafegade/

PUBLICATIONS

- Wireless Gesture Controlled semi-humanoid robot (ICRAIE-2016, **IEEE digital Xplore**) 2016
- Integrating Green energy manufacturing through Virtual Reality Solar Panel Design (**ASEE**) 2020
- Project-based Learning with Implementation of Virtual Reality for Green Energy Manufacturing Education (**ASEE**) 2020

PROFESSIONAL EXPERIENCE

Mechatronics lab, Drexel University, PA (**Research Assistant, Teaching Assistant**) Aug 19 – Jun 20

- Worked on various 4 axis, 6-axis Industrial robotic arms such as ABB, SCARA, YAMAHA, etc. to integrate them and perform pick-place and tracking applications. Also briefly worked on Allen-Bradley PLC to control robot pick and place operation.
- Designed robotic arm models and solar panel models in SolidWorks to simulate their application in virtual reality with the help of UNITY3D and C#.
- Developed 2 courses : VR course and advanced robotics course for Engineering Technology department at university.

Aqeel Medical, PA (**Research Assistant**) Jun 19 – Nov 19

- Studied EEG signals emitted by the brain using fNIRS sensor along with the MUSE to capture data and prepped it for preprocessing.
- Developed an app to focus on brain activity during leisure measured while enjoying video/audio and data is analyzed to predict favorable genres and types. Also worked on feature selection and extraction to refine the prediction based on EEG response model to produce desirable results.

HERE MAPS, India (**GIS analyst**) May 17 – Jun 18

- Promoted from GIS analyst to QC GIS analyst. Responsible for maintaining weekly team reports and implemented various techniques involved for processing, designing, and developing 3D environment.
- Designed and developed different map coding techniques used for autonomous car with LIDAR data using tools such as Atlas and Earthscape.

Perfect filament pvt ltd, India (**Process Automation Intern**) Dec'15- Jan'16

- Fabricated a robotic arm to remove the filled spindle from the texturing machine and place an empty spindle on the machine using multiple Arduino boards, autoCAD and inverse kinematics techniques.

EDUCATION

Drexel University, Philadelphia, PA
Master of Science, Electrical and Computer Engineering (major: Systems, minor: Computer science) (**GPA:3.73/4**) June 2020

University of Mumbai, Mumbai, India
Bachelor of Engineering, Electronics and Telecommunication Engineering (**GPA:3.5/4**) June 2016

PROJECTS

Designing Kalman Filter for Ultrasonic sensor, (**Project lead**) Jun 2020

- Designed and testing the performance of Kalman filter prediction with the help of Simulink against Arduino Mega system with Ultrasonic sensor HC-04

Creating an outfit from Fashion Images, (**Programmer and researcher**) Jun 2019

- Categorized garments dataset into multiple classes (such as pants or shirts, etc.) with CNN of 4 layers with cross-entropy loss function and Adam optimizer to calculate the compatibility of each piece from each of another layer using RNN. The pieces with maximum compatibility will be shown as output.

Object detection, (**Machine Learning programmer**) Feb 2019

- Worked on SVM machine learning algorithm to train a network to detect whether the object is present or not with HOG and NMS coded on python and OpenCV.

Convolutional Neural Network for retinal vessel segmentation, (Machine Learning Programmer and researcher) May 2017

- Assisted the research team and worked as ML intern on project for glucoma. Implemented unet cnn model using keras library with tensorflow backend on python and OpenCV on Ubuntu environment to obtain segmentation. The model was processed on DRIVE database.

Gesture Controlled Semi-Humanoid Robot, (Lead researcher and programmer) Nov 2016

- Designed kinematics and implementation of system in which robot is controlled by gestures with the use of microcontrollers (Arduino) and sensors such as flex and accelerometers. 19 degree of freedom per hand was achieved with high accuracy.

Motion Controlled Quad copter, (Programmer) Aug 2015

- Tried to implement a control technique for quad copter with mobile motion and Bluetooth as connectivity with help of electronic speed control (ESC). Encountered issues such as payload, noises during connectivity causing to break off.

Motion controlled car, (Programmer) Nov 2014

- Implemented Arduino, accelerometer in the phone and Bluetooth based project using tilt of mobile to control car.

SKILLS

Python, Java, MATLAB, OpenCV, Arduino, C, Simulink, awk, Bash, Scilab, ROS (beginner), C++, C#, Proteus, Eagle, keil, Visual Basic, HTML, keras, tensorflow, Unity3D, Solidworks.

HONORS AND ACHIEVEMENTS

- Dean's Scholarship, Drexel University College of Engineering