

SRINIDHI KALGUNDI SRINIVAS

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EDUCATION

University of California San Diego

Master of Science (M.S) in Electrical and Computer Engineering
Intelligent Systems, Robotics and Control

San Diego, CA

Sept 2021 – Mar 2023

Relevant Courses: Deep Generative Models, Statistical Learning, Image Processing and Computer Vision, Mathematics for Robotics, Sensing and Estimation in Robotics

PES Institute of Technology (PESIT)

Bachelor of Engineering in Telecommunication Engineering. GPA: **9.36/10**

Bangalore, India

Aug 2014 – Jun 2018

Courses: Linear Algebra, Probability and Random Processes, Signal and Image Processing

SKILLS

Programming Languages: Python, C/C++, C#, Lua

Software & Tools: PyTorch, Tensorflow, Scikit learn, OpenCV, MATLAB, Git, Jira, Confluence, JAMA

Peripherals: I2C, SPI, UART, USB, SPORT

EXPERIENCE

Autonomous Vehicle Laboratory, UC San Diego

Graduate Student Researcher ([Website](#))

San Diego, CA

Nov 2021 – Present

- Current research involves road network estimation based on the key points in the image frame and dynamic scene modelling for autonomous driving in urban environments– supervised by Dr. Henrik I. Christensen
- Involved in implementing solutions for ML at Edge on Qualcomm's RB5 platform using Snapdragon Neural Processing Engine SDK

Analog Devices Inc (ADI)

Senior Software Engineer, Infotainment, Processing and Connectivity Group

Bangalore, India

Aug 2018 – Aug 2021

- Designed and developed MISRA-C compliant software stack for next generation infotainment product – *Automotive Audio Bus (A²B) on ADI's DSPs*
- Implemented **High-Definition Content Protection** (HDCP v2.3) on BlackFin DSP, played a prominent role in latency reduction by optimizing buffering schemes for transmission of non-content protected audio data over A²B
- Enabled customers with Proof of Concepts (PoCs) to quickly analyze system requirements for applications involving the A²B
- Designed and developed **Software Over the Air Update** over A²B using Unified Diagnostics Services protocol. Demonstrated and presented the demo in **Global Technical Conference, May 2021** and **India Technical Conference, Aug 2020**
- Performed Configuration Management of the project adhering to ASPICE standards
- Mentored 2 New College Graduates and helped them upskill in development activities. Awarded **Spot Award** for contribution to the A²B project and to the team in Dec 2020

PROJECTS

Extended Kalman Filter Based Simultaneous Localization and Mapping, UC San Diego [Code](#), [Report](#)

Jan 2022 – Mar 2022

- Implemented Visual Inertial Simultaneous Localization and Mapping (SLAM) using Extended Kalman Filter (EKF)
- Developed EKF prediction step using SE(3) kinematics with IMU measurements
- Implemented EKF update step using stereo camera observation model with feature observations to localize the autonomous robot and map the environment

Particle Filter SLAM for an autonomous car, UC San Diego [Code](#), [Report](#)

Jan 2022 – Mar 2022

- Developed Particle Filter SLAM using odometry, 2D Lidar Scans and Camera measurements
- Implemented differential drive model-based motion model using odometry information of linear and angular velocities
- Built a 2D occupancy grid map using laser correlation model using Lidar information
- Performed texture mapping using RGB information from stereo camera measurements

Lattice Light Sheet Microscope Image Segmentation using Deep Learning, UC San Diego [Code](#)

Jul 2021 – Jul 2021

- Segmented microscope image (TIF format) of size 57x445x445 by using U-Net architecture with Tensorflow
- Created a training model from similar images as the microscope images were novel
- Generated training masks using ImageJ software
- Measured Intersection over Union (IoU) metric for different patch sizes of the test image and compared the performances

Steady State Visually Evoked Potential Based Brain Computer Interface, PESIT

Jan 2018 – May 2018

- Built a system using OpenBCI's Cyton Board to acquire EEG signals and control a three-command game
- Performed EEG signal pre-processing and extracted relevant features
- Compared accuracies of SVM, Relevance Vector Machine and LDA algorithms for command classification using confusion matrix

PUBLICATIONS

Swathi Bhat, Sushmitha S, Srinidhi Bharadwaj, Niranjana Krupa. **"Steady State Visually Evoked Potential Based Brain Computer Interface for Game Control"**. Third International Conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Techniques. Mysore, India. Dec 18 (Co-presented by: Srinidhi, Sushmitha)

<https://ieeexplore.ieee.org/document/9001590>
