Abhinuv Nitin Pitale

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Objective: To obtain a Co-Op/Internship for Summer/Fall 2018

Education

Masters in **Computer Engineering** at **Virginia Tech** **May'19** *(Expected)*

B. Engineering in **Electronics & Telecommunications** at **University of Pune** **May'16**

GPA: 70.16%, *Awarded* ***Consistently High Academic Performance (C.H.A.P) Award***

Courses

Computer Vision
Data Analytics
Data Structures
Network Arch and Protocols
Embedded Systems
Automotive Engineering

Technical Skills

Languages : Python, C, C++, Java, SQL, JavaScript
Tools : MATLAB, Simulink, Android, Jupyter Notebook, Git, Tensorflow, Pytorch

Work Experience

Neural Dynamics Lab, Virginia Tech, *Graduate Student Researcher* **Nov'17 - Present**

- Design of (Conv, RNN and LSTM-based) Neural Networks to study and model the Brain Activity
- Brain Machine Interface to study the effects of sleep on memory formation

Mercedes Benz Research & Development India*, Graduate Engineering Trainee* **Aug'16 – Jul'17**

- Design & Simulation of a navigation algorithm for autonomous driving in MATLAB.
- Implemented tool automation for ECU calibration using python & CAPL scripting. (CANape, CANoe, MONACO)
- Emission Norms testing on CAN bus on the Diagnostic Application layer.(ISO 14229, J1939)

Defense Research & Development Organisation, *Embedded Systems Intern* **Jun'15 – May'16**

- Generated Simulink model to select an multiple control strategies for simultaneous localization and mapping
- Developed Firmware for LPC 1769 to implement signal conditioning of IMU sensor data for navigation
- Performed real time data capture, analysis and visualization in MATLAB for debugging.

San Telequip Pvt. Ltd, *Embedded System Intern (wireless doorbell camera)* **Jun'14 – Nov'14**

- Developed firmware for a wireless doorbell camera based IoT product.
- Setup up an Apache server for storing, querying and processing client queries.
- Developed a JavaScript based web app and an Android app to view the video stream remotely

Projects

ASL Finger Spelling Gesture Recognition

- SVM classifier trained with 67% accuracy for Live Webcam feed using geatures extracted from HoG, SURF.
- CNN trained with the Treisch Dataset to improve the accuracy to 71% for static images.

Computer Vision Projects **Aug'17 – Nov'17**

- SLIC Pixel Clustering, GraphCut Segmentation, KLT Tracker, Structure from Motion, SIFT feature tracking

Data Driven Astronomy **Mar'17 – Jun'17**

- Trained a k-d tree classifier to cross-match galaxies in the SuperCOSMOS dataset to the ATG20 BSS catalog.
- Built classifier trees from the SDSS dataset to use ensemble learning to classify galaxies.

Web Crawling **Feb'17 – Jun'17**

- Web scraping using text, XML and HTML parsing on various news-feeds and websites.

The Freescale Cup – Intelligent Car Racing **Nov'14 – May'15**

- Implemented a PID controller in C for steering & navigation using a CCD Camera input on a FRDM KL25Z µC
- Lead a team of 3 to the national level event where our team secured the 4th position.

ABU Robocon 2014 *(2nd Runner's up in a national level competition)* **Sep'13 – Mar'14**

- Developed a 3-axis gantry system for 'pick and place' operations and a control algorithm to automate a 6-degree of freedom robot using inertial, proximity sensors and rotary encoders (to a precision of 1mm)

Publications

- Presented **'Signal Conditioning algorithms on accelerometers in an Inertial Navigation System'** at the International Conference on Signal and Information Processing (IConSIP-2016) ISBN 978-1-5090-1522-1
- Developed and Published **'DFT Tool'** on the Google Play Store

Awards/Achievements

- Secured **3rd place** at the IEEE project competition organised by the IEEE MIT Pune Student Chapter
- Founded the '**MIT Labs**' for promoting the use of **embedded platform** for development among my peers
- Guinness World Record, Limca and India Book of Record for 'Most People Solving Rubik's Cube'