

# Abhinuv Nitin Pitale

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## 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		Technical Skills	
Computer Vision	Network Arch and Protocols	Languages	: Python, C, C++, Java, SQL, JavaScript
Data Analytics	Embedded Systems	Tools	: MATLAB, Simulink, Android, Jupyter
Data Structures	Automotive Engineering	Notebook, Git	

## Work Experience

**Neural Dynamics Lab, Virginia Tech, Graduate Student Researcher**

**Nov'17 –**

- Design of (Conv, RNN and LSTM) Neural Networks to study Brain Activity
- Interface Brain Machine Interface for studying 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.
- Emission Norms testing on CAN bus on the Diagnostic Application layer.

**Defense Research & Development Organisation, Embedded Systems Intern**

**Jun'15 – May'16**

- Generated a Simulink model to select an optimum control strategy for odometry.
- 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.
- Developed a JavaScript based web app and an Android app to view the video stream remotely

## Projects

[ASL Finger-spelling Gesture Recognition](#)

**Oct'17 –**

- SVM classifier trained with 67% accuracy for Live Webcam data using features extracted from HoG, SURF
- CNN trained with the Tiesch Dataset to improve the accuracy to 71% for static images

[Cyber Security Data Analytics](#)

**Oct'17 – Dec'17**

- Examined log files and system admin data of a company to find evidence of a security threat on their data
- Generated Analytical models for their employees to predict resignations and model suspicious behavior

[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 4<sup>th</sup> position.

[ABU Robocon 2014](#) (2<sup>nd</sup> 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](#)

## Awards/Achievements

- Secured 3<sup>rd</sup> 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'