

# Aadithya Venkatanarayanan

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EDUCATION	<b>University of California, Los Angeles</b> M.S., Electrical and Computer Engineering <b>SSN College of Engineering, Anna University</b> B.E., Electronics and Communication Engineering	<b>CGPA: 3.83/4.0</b> December 2018 <b>CGPA: 8.56/10.0</b> June 2017
TECHNICAL SKILLS	<b>Languages</b> C, C++, Python, C#, Bash Scripting <b>Software</b> Arduino IDE, Android Studio, Atmel Studio, CCS, MATLAB, Git, Yocto Build, Linux <b>Toolkits</b> Scikit-Learn, Scipy, Numpy, Pandas, Matplotlib <b>Cloud</b> Microsoft Azure, Thingspeak, Google Firebase <b>Protocols</b> NTP, DNS, DHCP, I <sup>2</sup> C, SPI, Serial, MQTT	
EXPERIENCE	<b>Software Engineer (C++, Python, Shell)</b> <b>Cisco Systems</b>  <ul style="list-style-type: none"><li>Contributed to software development efforts for Cisco IC3000 IoT Edge Compute module.</li><li>Architected back-end APIs using hashmap to interface with device UI for configuring device parameters like user authentication, networking, server and module bring-up parameters.</li><li>Designed Secure Boot algorithm for signing and validating from BIOS to kernel and initrd validation.</li><li>Developed image integrity (Secure Boot) and image upgrade API's using Python.</li><li>Enhanced system features such as reset, reboot, users/image/IP address management.</li><li>Identified and solved multiple bugs as part of software enhancement and field issues.</li><li>Developed pipelines for automatic detection and configuration of Small Form Factor Pluggables (SFP) for tri-speed auto-negotiation, LED support and displayed SFP vendor information on CLI.</li></ul> <b>Engineer Co-Op (C#, Python)</b> <b>Midmark Corporation</b>  <ul style="list-style-type: none"><li>Developed a C# Microsoft Windows application for BLE R/W characteristics, sorted and displayed devices in the UI based on BLE Received Signal Strength Indication for Midmark RTLS technology.</li><li>Validated RTLS (Distance vs RSSI) technology and visualized the results using Python-Matplotlib.</li></ul>	<b>February 2019 - present</b> Milpitas, CA          <b>Summer 2018</b> Torrance, CA
PROJECTS	<b>Design of Smart System aided Bike (C++, Java)</b>  <ul style="list-style-type: none"><li>Designed software for an IoT smart bike deployed with security system to prevent theft and integrated with sensors to monitor air quality level using Arduino/ESP 8266 and transferred data to cloud.</li><li>Integrated a custom developed Android application to display pollution map over user's bike route, created a signup/login and chatroom mechanism using Google Firebase APIs.</li></ul> <b>FitGroup - Network of Hexiwears for group fitness (C++, Azure IoT)</b>  <ul style="list-style-type: none"><li>Created a family fitness-watch setup using BLE and Wi-Fi to track group fitness data on Hexiwear.</li><li>Computed steps/heart-rate data from sensors and pushed data to Raspberry Pi and Microsoft Azure.</li><li>Used Microsoft Azure APIs for computing analytics and transfer of fitness data between watches.</li></ul> <b>Movie Recommendation system using collaborative filtering (Python)</b>  <ul style="list-style-type: none"><li>Created a Movie Recommendation System using k-NN and NMF based Collaborative filtering and evaluated predictions using metrics like ROC, Area under Curve, RMSE, Precision Recall Curve.</li></ul> <b>News Group Classification Analysis using Textual data (Python/Sklearn)</b>  <ul style="list-style-type: none"><li>Constructed TF-IDF out of 20 Newsgroups dataset, applied PCA and NMF dimensionality reduction, applied supervised classification algorithms, evaluated performance using accuracy, precision, recall and F-1 score.</li></ul> <b>Drone for Surveillance purposes (Embedded C)</b>  <ul style="list-style-type: none"><li>Developed firmware for an 8-bit quadcopter controller for surveillance using Atmega 328p/MPU 6050.</li><li>Used Interrupt Routines, I<sup>2</sup>C communication, PWM and PID Control Loops.</li></ul>	<b>Winter 2017</b>          <b>Spring 2018</b>          <b>Winter 2018</b>          <b>Winter 2018</b>          <b>Summer 2016</b>
COURSEWORK	<ul style="list-style-type: none"><li>Large Scale Data Mining, OOPS &amp; Data Structures, Advanced Computer Networks, Networked Embedded Systems, Web Technology, Human Computer Interaction, Security in Embedded Systems, Network Protocols &amp; Software Design for Wireless &amp; Mobile Systems, Machine Learning (Udacity UD120).</li></ul>	
PUBLICATION	<ul style="list-style-type: none"><li>"Design of sensor system for air pollution and human vital monitoring for connected cyclists" published in IET Communications in 2019.</li></ul>	