

## ADIT SHAH

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**SUMMARY** High school student passionate about driving positive societal change using computer science, machine learning, and robotics. My current areas of interest include research in multi-robot systems for natural disasters, and the applications of machine learning to social justice and medical diagnostics.

**SKILLS** Programming: Python, Java, Kotlin, C/C++, MATLAB  
Machine Learning: Neural Networks, Random Forest, Clustering, TensorFlow, Keras, YOLO, Object detection, Robotics: ROS, gRPC, Gazebo, LIDAR, Autonomous operations, NVIDIA Jetson TX2

### RESEARCH EXPERIENCE

- Summer 2019 [Research Mentorship Program](#), University of California, Santa Barbara, CA  
[Improving the Efficiency and Scalability of Multi-Drone Coverage Systems with Decentralized Control](#)  
(mentored by Bryce Ferguson, PhD Student at UCSB)
- One of 75 high-school students from around the world chosen for graduate-level research
  - Developed and simulated decentralized algorithms in MATLAB for multi-drone coverage systems for applications in mapping, disaster prevention and assessment, and environmental monitoring
  - Authored an academic research paper, delivered a 10-minute symposium talk, and participated in a poster session

### INDUSTRY EXPERIENCE

- April 2018 [Robolink](#) (Robotics Education Company), San Diego, CA  
- January 2019 Software Development Intern
- Developed software for Zümi, a new CES award-winning robotics kit
  - Developed Machine Learning demos and optimized these demos on the Raspberry Pi for Zümi
  - Ran Robolink's San Diego Maker Faire booth, presented ML demo, and marketed products and classes
- Summer 2018 & 2017 [Avi Networks](#) (Software Load Balancing and Web Application Firewall), Santa Clara, CA  
Software Development Intern
- Developed a Machine Learning proof of concept for WAF (Web Application Firewall) product using Neural Networks, Random Forest, and Clustering algorithms
  - Developed automation software in Python and Ansible for testing the Avi Vantage Platform on Cisco CSP 2100, reducing end-to-end testing cycle on this platform from hours to minutes

### COMMUNITY SERVICE

- July 2019 - [Tenderloin Technology Lab](#), St. Anthony Foundation, San Francisco, CA  
Present Tutor, Guest Assistant, Workshop Volunteer
- Volunteer at the Tenderloin Technology Lab, a free technology training center and computer lab located in the Tenderloin, San Francisco's poorest district, to provide vulnerable residents with basic technology skills
  - Help people in the local community apply for jobs, format resumes, and provide general technical support
  - Work with guests 1-on-1 to help demystify technology, and help teach computer and smartphone workshops

### ACTIVITIES & INITIATIVES

- 2017-Present: [Athenian WiSE](#), The Athenian School  
Co-Founder & Board Member
- Founded WiSE (Women in Science and Engineering) – a gender-diversity STEM initiative
  - Run an annual hands-on STEM event that attracts 200+ people – now in its 3<sup>rd</sup> iteration
- 2017-Present: **FRC Team 852, The Athenian School**  
Programming Lead & Executive Board Member, Member Training Lead, Operations Lead
- Member of executive board, which includes 6 students team mentors, and has final say on all team decisions
  - Responsible for all programming on the robotics team, including robot driver-control, autonomous, and team apps
  - Responsible for organizing all pre-season team training, develop curriculum and teach programming sessions
  - Oversee team operations (non-robot) tasks, including outreach and competition logistics
  - 7<sup>th</sup> year of robotics (including FRC, VEX Robotics – attended World Championships twice, and FLL)
- 2017-Present: **Entrepreneurship, The Athenian School**
- Developed idea for a software platform to diagnose autism by applying Machine Learning to EEG data
  - Won the Northern California division of the [Diamond Challenge](#), a global entrepreneurship competition
- 2018-Present: **Physics Teaching Assistant, The Athenian School**
- Grade homework assignments, lab reports, quizzes, and tests; tutor students 1-on-1 and hold office hours
- 2019-Present: **Student Teaching & Learning Committee, The Athenian School**
- Working with the Director of Teaching and Learning to revamp the school's 6<sup>th</sup> to 12<sup>th</sup> grade science curriculum to bring it in line with the NGSS standards and add an honors science program

## EDUCATION

- 2017-Present: **The Athenian School (High School)**, Danville, CA GPA: 4.45  
AP Comp Sci (5), AP Calc AB (5), AP Calc BC, Data Structures & Algorithms, Physics, Biology, Advanced Chemistry  
Other Activities: Math Club (Co-Founder)
- 2017-2018: [Coursera Deep Learning Specialization](#) by Andrew Ng  
• TensorFlow • Keras • Neural Networks • Hyperparameter tuning and optimization • Data collection  
• Structuring Machine Learning Projects • Convolutional Neural Networks • Recurrent Neural Networks

## AWARDS

- Feb. 2020 **Dean's List Semifinalist**, First Robotics Competition
- Nov. 2019 **Meritorious**, [High School Mathematical Contest in Modeling \(HiMCM\)](#)
- Nov. 2018 **3<sup>rd</sup> Place**, SMHacks (High School Hackathon)
- Feb. 2018 **Northern California Winner**, Diamond Challenge
- Apr. 2016 **2<sup>nd</sup> Place**, Alameda County Science and Engineering Fair