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Ryan Tse

Education

2015–Present **Montgomery Blair High School**, *Magnet Program*, *Senior Year*.

- Mathematical Physics and Quantum Physics
- Single Variable Calculus, Multivariable Calculus, Linear Algebra, and Complex Analysis
- Applied Statistics, Political Statistics, and Sports Statistics
- Analysis of Algorithms and Computational Methods
- Introduction to Organic Chemistry and Advanced Earth and Space Sciences

Experience

Summer 2018 **Pathways Intern**, *Naval Center for Space Technology Spacecraft Engineering*.
Developing an efficient non-GNSS bursty satellite ranging protocol.

2017–Present **blair3sat Project Lead**.
Leading a high school team to develop a CubeSat to measure ionospheric effects on RF propagation. Coauthor of *Space-based Ionosonde Receiver and Visible Limb-viewing Airglow Sensor (SIRVLAS): A CubeSat Instrument Suite for Enhanced Ionospheric Charge Density Measurements* published in the *33rd AIAA/USU Conference on Small Satellites*.

2017–Present **MBHS Systems Modeler**.
Developing an reinforcement learning agent to solve incompressible flows more quickly by running RANS, LES, and DNS on different subsets of the simulation domain.

Fall 2018 **ORACLE of Blair Developer**, *Montgomery Blair High School Math Department*.
Developing a predictive model of the 2018 US House midterm elections. Interpolating vote distributions in un-polled districts from demographically similar polled districts.

Summer 2017 **SEAP Intern**, *Laboratory for Autonomous Systems Research*.
Researching neural network based approaches to vehicle trilateration. Coauthor of *Wearable interactive display for the local positioning system (LPS)* published in *ACM ICMI 2017*.

2015–2017 **FRC 449 Software and Controls Lead**.
Developing drivetrain control and automation software, leading the 2017 software team.

2012–Present **Boy Scout**, *Troop 1449*.
Eagle Scout, former Senior Patrol Leader, Troop Quartermaster, and Patrol Leader.

Technical Tools

Python | C/C++ | GNURadio | Tensorflow | Keras | OpenAI Gym | Matlab | Java | R | Git | Autodesk Inventor | Autodesk AutoCAD | LaTeX | Microsoft Office Suite

Competitions

2019 Bitcamp 2019, built *Open Weapon Site Finder*, won *Best Digital Forensics Hack*, runner up for *Best Machine Learning Hack*

2019 Google Cloud & NCAA ML Competition (Kaggle March Madness) 37th out of 866

2019 MathWorks Math Modeling Challenge Second Round Contender

2017 COMAP High School Mathematical Contest in Modeling (HiMCM) Competitor

2016 HackUMBC 2016, built *IMUCAP*, won *Most Innovative Game*