

Ryan Tse

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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-pollled 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

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

Competitions

- 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) Contender