# Nathan Yan

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## Education

***Sep 2020 - Present*** **University of Washington, Paul G. Allen School (CS)**

- Undergraduate student at the Paul G. Allen school for computer science and engineering.

***Sep 2016 - Jun 2020*** **Newport High School**

- GPA 3.96 (UW)
- Relevant AP exams (5 unless otherwise noted): Calculus BC, Calculus AB, Physics C - Mechanics, Physics C - Electricity and Magnetism, Chemistry, Computer Science A
- Relevant SAT test scores: SAT (1550), Math II (800), Physics (800)
- National Merit Finalist

## Skills

- Experienced with Python, Java, HTML/CSS and Javascript; familiar with C++
- Proficient in full-stack: Node.js (React and Express), Flask, cloud infrastructure and API development
- USACO Gold Division
- Team 1st Place, TeamsCode programming contest Advanced Division, March 2019
- Team 2nd Place, PLU programming contest Advanced Division, February 2018
- Team 1st Place, PSCSTA programming contest Advanced Division, December 2017

## Experience

***Jul 2019 - Aug 2019*** **Yale Summer Program in Astrophysics,** New Haven, CT

*Student*

- Researched supernovae and implemented state-of-the-art techniques in data processing for astrophysics research at Yale University
- Produced lightcurves based on daily observation of supernova SN2019IEE and submitted data to the AAVSO

***Sep 2018 - Present*** **Smart Coding School,** Bellevue, WA

*Instructor*

- Hired by Smart Coding School to teach beginner and intermediate Python courses
- Beginner course focuses on syntax and basic programming concepts
- Intermediate course focuses on simple data structures like stacks, queues and trees

***Oct 2017 - Present*** **Tyee Math Club**, Bellevue, WA

*Math Coach*

- Teach and privately tutor competition math (AMC 8/10/12, MATHCOUNTS) to classes of about 30 students at Tyee Middle School

## Projects

***Aug 2018 - Present*** **Thrust Vector Control in Model Rockets**

- Create systems for thrust vectoring and (eventual) propulsive landing at model scale
- Embedded system and hardware design of printed circuit boards
- C++ programming with Arduino and ARM processors
- 3D mechanical design using OpenSCAD and Fusion 360
- Gain understanding of college-level topics like linear algebra (quaternions, rotation matrices), and control theory

***Oct 2017 - Present*** **GradeBook**

- Designed app for displaying grade information to students in the Bellevue School District (200+ users)
- Offers a modern UI and useful features which allow students to predict future grades and set goals for future performance in the classroom
- Originally a Flask web application in Python, eventually developed a mobile app using React Native in collaboration with 3 others.

***Sept 2017 - Present*** **Neural Network Implementations**

- Implement deep learning systems described in research papers.
- Implemented models and algorithms including Neural Turing Machine, Deep Recurrent Attentive Writer, Deep-Q Network and Recurrent Models of Visual Attention in Theano/PyTorch/Numpy
- Create small experiments with models, like creating fractals with randomly initialized "neural networks" [nathan-yan.github.io/fractals], or growing MNIST digits with neural cellular automata [github.com/nathan-yan/mnist-neural-automata]