

Matthew Wang

Aspiring Software Engineer. Former CS Teacher.

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🎓 Education

Princeton University

Bachelor of Science and Engineering in Computer Science - 3.7 GPA, Magna Cum Laude
Certification in Teacher Preparation in Mathematics

Princeton, NJ
May 2016
May 2017

- > Theory of Algs, Functional Prog., Comp. Architecture, A.I., M.L., Information Security
- > Strategy & Information, Graph Theory, Combinatorial Math, Probability & Stochastic Systems, Linear Algebra

</> Relevant Experience

Bergen County Academies

CS Teacher for the Academy of Technology and Computer Science

Sep 2018 – Jun 2023
Hackensack, NJ

- > Revamped the *Web App Dev* elective sequence, updating tech stack from PHP to **NodeJS** with 3rd-party login and cloud deployment. Ultimately developed (🌐 /inventory-webapp-tutorial-series) for my lessons, future teachers of the course, and independent student learning. Led to major increase and improvements in web apps built for *CS Capstone*, our culminating 12th-grade team project experience.
- > Dramatically restructured *CS Capstone* with co-teacher to utilize **Agile**-esque project management processes, including "Scrumban" Trello boards with biweekly sprint reviews, needs assessment, prototyping, and external expert security reviews. Also developed & taught new units on networks and multitier architecture. Greatly improved student engagement throughout the year, and final products became dramatically more polished and deployable.
- > Designed original curricula & materials for new *Machine Learning* and *AI* courses, including dozens of Colab notebooks as lesson guides & assignments, a large custom dataset based on BCA's college acceptances for a project, and interactive **Python** visualizers for search & game algs (see PROJECTS). Introduced 50-100 students each year to ML & AI and inspired multiple student research initiatives.
- > Led collaborative effort to update the **C Programming** course to run via an **AWS** cloud server and SSH logins from students, producing a reusable EC2 image and a collection of bash scripts for key distribution, file system setup, and batch assignment grading. Ensured cross-platform access & consistent student experience across devices, and greatly increased course management efficiency.
- > Made significant contributions to course sequences, coding assignments, and custom auto-graders for multiple cross-teacher courses, including *AP CS A + Data Structures [Java]*, *Intro to CS [JS, TS]*, and *Relational Databases [MySQL]*, improving the scope & rigor of our curricula, and strengthening the culture of collaboration amongst CS teachers. Over my 5 year tenure, CS elective registration nearly quadrupled.

TripAdvisor

Data Science Intern

Jun – Aug 2016
Newton, MA

Faithlife

Software Dev Intern

Jun – Sep 2015
Bellingham, WA

🔧 Projects

SongSets

🌐 /matthew-h-wang/songsets 🌐 songsets.up.railway.app

- > **NodeJS** web app for musicians to build & manage setlists with their bands.
- > Personal project, inspired by the need for planning & tracking church music across weekly services

AI Algorithm Visualizers

🌐 /atcs-wang/AI_Lab1_Search 🌐 /atcs-wang/AI_Lab2_Games

- > **Python** visualizers for search & game algs, designed as interactive demos & assignments for AI elective
- > Extensible & abstract framework allows algorithms to apply across multiple visual environments