

Matthew Wang

Former CS teacher looking to become an SWE.

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For 5 years, I've taught some very bright high schoolers how to write code and build apps. Keeping up with my students has made me a fast learner of new tech and an effective communicator of complex ideas. Now, I want to learn how to build products and tools at industry scale. I love collaborating and hope to join a team with opportunities for both mentorship and self-initiative.

</> Relevant Experience

Bergen County Academics

CS Teacher for the Academy of Technology and Computer Science

Sep 2018 – Jun 2023

Hackensack, NJ

- > Dramatically restructured CS *Capstone*, the culminating 12th-grade team project course, to better guide students through the process of building complex apps for clients, incorporating **Agile**-like management
 - * Developed & taught new units on networks and multitier architecture, including security and deployment
 - * Managed dozens of projects with varying tech, including React, PHP, Django, Flask, MongoDB, & Firebase
 - * With co-teacher, implemented "Scrumban" Trello boards w/ biweekly sprint reviews, needs assessment, prototyping, and external expert security reviews in each student team's development process
 - * Long-term student engagement improved, and final products became significantly more polished
- > Revamped the *Web App Dev* elective sequence, updating tech stack from using PHP to **NodeJS** (with **MySQL**)
 - * Added integrating 3rd-party authentication [Auth0] and cloud deployment [Heroku, railway.app]
 - * Condensed curriculum into a set of comprehensive tutorials (🐙 /inventory-webapp-tutorial-series) for future instructors to teach from & students to independently learn from
 - * Changes led to major increase in quantity and quality of web apps built for CS *Capstone* (see above)
- > Designed original curricula for new *Machine Learning* and *Artificial Intelligence* electives in **Python**
 - * Materials included Colab notebooks [pandas, scikit-learn] as lesson guides & assignments, a large custom dataset based on BCA's college acceptances, and interactive visualizers for AI algs (see PROJECTS)
 - * Introduced 50-100 students/year to ML & AI and mentored multiple student research initiatives
- > Led collaborative effort to update the **C Programming** course to run via an **AWS** EC2 cloud server
 - * Configured SSH logins for students to ensure cross-platform access & consistent experience
 - * Created EC2 image and bash scripts for automated file system setup, user account generation, key distribution, and batch grading of assignments, greatly increasing setup & management efficiency
- > Contributed to multiple cross-teacher courses (such as AP CS & *Data Structures*, *Intro/Foundations of CS*, and *SQL*) by updating curricula, creating original coding exercises, and developing tools like auto-graders and schedulers [**Java**, **Python**, **JS**, **TS**, **SQL**]

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**, **MySQL** web app for bands to collaboratively build & manage setlists. Auth0-powered login.
- > Personal project, inspired by my wife and I's need to plan & track 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
- > Abstract & extensible framework allows algorithms to apply across multiple visual environments

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

Coursework includes : A.I., M.L., Information Security, Theory of Algorithms, Functional Programming, Computer Architecture, Graph Theory, Combinatorial Math, Probability & Stochastic Systems, Linear Algebra

Interests

Music : Church music, jazz piano, "Lindy Hop" swing dance

Games : Strategy board games and video games, competitive SSBM