Adrian Wang

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Education

University of Pennsylvania – School of Engineering and Applied Science   **May 2022**

    Bachelor of Science in Engineering: Networked and Social Systems Engineering (NETS)

    Completed coursework: Data Structures and Algorithms (Java), Computational Linguistics (Python), Database and Information Systems (JS/Postgres/MongoDB), Scalable and Cloud Computing (JS/DynamoDB/EC2), Discrete Math, Engineering Probability, Decision Models

    Current coursework: Advanced Programming (Haskell), Software Foundations (Coq), Big Data Analytics (Python)

    GPA: 3.88/4.00

Projects

CollegeBnB (Team of 4 – Javascript, SQL/Postgres)   **March-April 2020**

- Built web app to help applicants plan college visits by finding universities and nearby Airbnbs that fit their preferences for size, location, acceptance rate, average SAT/ACT scores, etc.
- **Personal contributions:** Implemented BCNF Postgres model to reduce redundancy, wrote parametrized query framework to discourage SQL injection and make it easy for developers to implement filter operations involving alphabetical or numerical fields, improved query performance by restructuring JOIN operations and adding indices
- **Other features:** React frontend, Google Maps integration to show user's selected colleges and Airbnbs

PennBook (Team of 3 – Javascript/Node/Express, HTML/CSS, AWS/EC2/DynamoDB, Hadoop)   **November-December 2019**

- Designed and implemented social network site hosted on an EC2 instance with DynamoDB backend
- **Personal contributions:** Rendering dynamic pages for login, account creation, posts, and comments using EJS and JQuery; implementing database backend for all users, posts, and comments; designing frontend in HTML/CSS; limiting redirects to minimize flickering for improved UX
- **Other features:** Persistent private and group chats, friend recommendations from a MapReduce adsorption algorithm

Experience

Information Technology Intern – Annaly Capital Management (C#, React, SQL)   **May-August 2020**

- Created .NET Core package to give developers straightforward access to a proprietary file storage API
- Wrote ASP.NET Core REST API based on said package to make common functionalities easily accessible
- Enabled users to start automated reruns of financial procedures with new pages on React frontend, alongside additions to the SQL/ASP.NET Core/VisualCron backend

CIS120 Teaching Assistant – Programming Languages and Techniques I (OCaml, Java)   **September 2020-present**

- Taught weekly recitations to reinforce important code concepts with specific examples and code demos
- Helped students overcome difficult concepts and implementation problems during weekly office hours
- Improved students' ability to write optimized code with good style during individual code reviews

Residential Teaching Assistant – Engineering Summer Academy at Penn (Python)   **July 2019**

- Created assignments with individualized random problem inputs and grading protocols for high schoolers
- Implemented graph generator with highly varied vertex importance using non-uniform degree distributions and separated communities
- Decreased large-scale testing times from >1 minute to <5 seconds by optimizing a probabilistic graph contagion model

Complex Networks Program – Engineering Summer Academy at Penn (MATLAB)   **July 2017**

- Implemented probabilistic and deterministic graph contagion models
- Designed seeding algorithm to select influential nodes in a graph, maximizing expected infection size

Arduino Microcontrollers in Robotics – Northwestern Center for Talent Development (C)   **July 2015**

- Constructed and programmed clock with temperature sensor, mp3 player, other functions controlled via gesture sensor
- Created line-following robot by using infrared sensors to detect reflected light levels underneath the vehicle

Languages

Java, Python, Javascript (React, Node, Express), C#, HTML, CSS, SQL, OCaml, Haskell, Coq, MATLAB, C, C++