Chih-Yang(Young) Lin

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Education

- **Washington University in St. Louis** St. Louis, MO
  Bachelor of Science in Computer Science and Financial Engineering - GPA: 4.00 *August 2020 - May 2024*
  - **Relevant Coursework**: Data Structures and Algorithms, Object-Oriented Design, Rapid Prototype and Creative Programming (Full-Stack), Data Science, Financial Accounting, Capital Markets and Financial Management
  - **Awards**: Dean's List (4/4 semesters), Antoinette Frances Dames Award
  - **Organizations**: Google Developer Student Club (Developer), WashU Student Investment Fund (Junior Analyst)

Experience

- **Washington University McKelvey School of Engineering** St. Louis, MO
  Research Assistant - Computer Security and Privacy Laboratory *January 2022 - Present*
  - Selected as 1 of 17 participants in the Washington University summer research for undergraduate (REU) program.
  - Implemented xvector-PLDA, yvector-PLDA, and GMM-PLDA speech recognition systems(SRS) by setting up the conda environment and adapting the original Python scripts to extract decision results and scores of the enrolled speakers. Enabled the lab to launch and test adversarial attacks on black-box SRS.
  - Conducted preliminary studies on automatic code generation by reviewing literature on the transformer architecture and setting up PolyCoder, an open-source code generation model.
  - Proposed possible adversarial attacks on autonomous vehicles by understanding the exposure sequence of mainstream HDR(high dynamic range) algorithms and reviewing existing literature in this area.

  Teaching Assistant - Data Structures and Algorithms *September 2021 - Present*
  - Led a group of 20 students in completing in-class assignments by facilitating discussions and assisting them in grasping concepts like run-time complexity, greedy/sorting algorithms, and data structures in Java.
  - Assisted students in completing biweekly lab assignments by hosting weekly office hours that provided one-on-one assistance on concept review and code debugging.

  Academic Tutor - Introduction to Computer Science *September 2021 - December 2021*
  - Introduced students to concepts like recursion, linear data structures, and object-oriented programming by teaching simple and practical examples that increased the students conceptual understanding of lab assignments.
  - Provided direct assistance on lab assignments by explaining the questions conceptually and offering clear alternatives to debugging convoluted code, which resulted in an increase in lab completion.
  - Enhanced performance on exams by hosting exam reviews to explain core concepts and facilitate mock exams

Projects

- **E-commerce Website**
  - Built a full-stack e-commerce website by integrating React and Django that supports top products carousel, product reviews, product search, full-featured shopping cart, order management, and a checkout process.
  - Leveraged Django as the backend to create a scalable application that connected with PostgreSQL to store product/user information. Used React and React-Bootstrap to build user interface that support a full-feature e-commerce platform.
- **Multi-Room Chat Server**
  - Constructed a multi-room chat server with Node.js as the runtime environment and Socket.IO to establish a WebSocket connection between the server and the client, which allows users to create and join public/private chat rooms freely.
  - Implemented admin privileges by using JavaScript to process commands that enables admins to remove and ban users from the room.
- **File System Simulation**
  - Built a software simulation of a file system by utilizing object-oriented programming design principles and patterns, including interface inheritance, abstract factory design pattern, and command patterns that helped implement user interface similar to a command prompt.
  - Created eight unique commands with C++ that allows users to access and modify the files in the file system.

Technical Skills

- **Programming Languages:** Java, Python, C++, JavaScript, Bash, HTML, CSS, PHP, SQL
- **Libraries/Frameworks:** React, Node.js, NumPy, Pandas, Sklearn, Django
- **Tools:** Conda, Git, Socket.IO, Linux, MySQL, PostgreSQL