Eric Zhou

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Education

Cornell University, College of Engineering Ithaca, NY
Bachelor of Science in Computer Science Expected May 2027
Relevant Courses: Object-Oriented Programming & Data Structures (Java), Calculus III, Discrete Structures, Intro to OR

Experience

The Future Laboratory, Tsinghua University Beijing, China
Software Engineer Intern Jun 2023 - Aug 2023

- Facilitated 5-intern research project aimed to fuse contemporary technologies with Peking Opera, resulting in an interactive, dynamic digital rendition of significant Chinese culture (first author of paper)
- Analyzed and implemented computer vision face filters, and database querying, culminating in the creation of an interactive user interface, making 70+ commits and authoring 17,000+ lines of code in total
- Streamlined communication channels with the laboratory director and project mentor, ensuring cohesive progress

Tailored Brands Bellevue, WA
Retail Sales Associate Mar 2023 - Jun 2023

- Provided assistance with fitting, selection, purchases, and inquiries for at least 5 customers per 4-hour shift
- Assisted managers with closing duties and communications, cooperated with 5 colleagues to oversee store operations and inventory management

FTC Team RoboEclipse Redmond, WA
Co-Captain/Software Lead Jun 2017 – Jun 2023

- Directed an 11-member team, orchestrating meetings, providing guidance, fostering seamless communication, and overseeing coordination of over 20 internal and external events
- Engineered pivotal software, including a sensor-based navigation algorithm, a computer vision-driven alignment system, and automation via finite state machine; committed more than 50 times, contributed over 10,000 lines of code per season

Projects

Peking Opera Experience System (The Future Lab, Tsinghua University): *Python (Pandas, Flask, OpenCV, NumPy), HTML5 (Jinja2), JavaScript (jQuery, AJAX), CSS (Bootstrap)*

- Designed database queries to facilitate personalized facial makeup style matching using Pandas
- Developed 2 filter application algorithms employing OpenCV, MediaPipe, and Pillows to show user with applied facial makeup
- Crafted an engaging, interactive website UI culminating all project components by integrating Flask with frontend development, bolstered by the power of Bootstrap styling and AJAX functions. The UI is also modular and easily expandable with Jinja2

Stock Prediction (Independent Project): *Python (TensorFlow/Keras, scikit-learn/sklearn, Scipy, NumPy, Pandas, Matplotlib, Plotly)*

- Experimented statistical methods and machine learning models such as Bollinger Bands, SVMs, and LSTMs for stock trend prediction using Keras, Sklearn, Scipy, and NumPy for math and modeling, and Matplotlib and Plotly for visualization
- Investigated parameter optimization, changing prediction outputs (price vs direction), stock clustering, and min confidence

Search Engine Chatbot (Independent Project): *Python (NLTK, sentence-transformers, BeautifulSoup, urllib, threading)*

- Harnessed power of multithreading with BeautifulSoup and urllib to retrieve data from top Google search results
- Created interactive Chatbot (predates ChatGPT) capable of basic greetings and answering any question through combining webcrawling with question-answer matching done with sentence-transformers and NLTK (also capable of providing additional context to responses and article summarizations)

Robot Navigation (Independent Project): *Linux, Python (Robot Operating System (ROS), Simultaneous Localization and Mapping (SLAM))*

- Examined and deployed Robot Operating System (ROS) to facilitate robot movement and precise control of a robotic arm
- Adapted Simultaneous Localization and Mapping (SLAM) library for robot with RGBD camera and LiDAR using ROS

Skills

- Programming Languages: Python, Java, R, SQL, JavaScript, HTML5, CSS, Arduino
- Libraries: TensorFlow, Keras, NumPy, Pandas, Matplotlib, Plotly, OpenCV, Flask, NLTK, BeautifulSoup, Selenium
- Other Tools: Git, GitHub, Excel, Adobe Premiere Pro, Android Studio

Awards

Presidential Volunteer Service Award 4 consecutive years
Received in recognition of exemplary community service, maintaining around 130 volunteer hours per year on average.

FIRST Dean's List Semifinalist Feb 2022
Nominated for outstanding leadership after guiding my FTC robotics team to 5 state championship qualifications, securing 2 WA state championship wins, and achieving 3 World Championship qualifications.