ERIC LIN

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EDUCATION

CARNEGIE MELLON UNIVERSITY (CMU) **Pittsburgh, Pennsylvania**
Bachelor of Science, Computer Science and Information Systems **Expected Graduation: May 2026**

- **Relevant Coursework**: Data Structures and Algorithms, Functional Programming, Application Design and Development, Database Design and Development, Web Development Fundamentals

PROJECTS

E-Commerce Shopping Website (MongoDB, Express.js, ReactJS, NodeJS)

- Developed a responsive frontend UI and utilized React Router DOM for seamless navigation and dynamic routing
- Engineered a robust backend system using Express.js, MongoDB Atlas, and Mongoose schemas
- Implemented user authentication and authorization features with JSON web tokens for secure access to the application
- Conducted extensive testing using Postman to ensure the reliability and functionality of the RESTful APIs
- Integrated Redux Toolkit for state management, ensuring efficient data flow throughout the application.

TikTok Database Replication (PostgresSQL, SQL)

- Designed and implemented a relational database model in Python to replicate the structure and functionality of TikTok
- Employed normalization techniques to ensure referential integrity and maintain database consistency
- Developed scripts to execute SQL queries simulating user profiles, video uploads, likes, and comments
- Used the PostgreSQL procedural language to write trigger functions to handle data insertion, updates, and deletions

Spotitector - Hackathon Project (OpenCV, Python)

- Developed a Python application to analyze human emotions through facial expressions and recommend songs
- Leveraged the OpenCV computer vision library to accurately detect and analyze facial expressions in real-time
- Utilized the Spotify API to dynamically generate song suggestions tailored to the detected emotions

Pathfinding Police Game Application

- Developed an immersive police escape game utilizing Python's object-oriented programming (OOP) paradigm
- Integrated advanced search algorithms including A-star and Dijkstra algorithms for the police chasing algorithm
- Utilized the model-view-controller framework to divide the logic of the application and increase code reusability
- Conducted extensive playtesting and user feedback sessions to iterate on game mechanics and optimize performance

Digit Recognition Simulator

- Engineered a digit recognition system with a perceptron learning algorithm to accurately classify digits 0-9
- Developed a Python script to train a neural network with TensorFlow to test and classify images of distorted digits
- Designed an interactive visualizer that showcases dataset noise and dynamic classification in real time using Pygame

PROFESSIONAL EXPERIENCE

ZUZLab **Pittsburgh, PA**
Product Management Intern **Sept 2022 - May 2023**

- Assisted Professor Seth Goldstein on ZUZ, a platform that aims to promote equitable access to capital for businesses
- Conducted user and technical research on how currencies on public ledgers can promote trust within local communities
- Contributed to the product roadmap by investigating user requirements and deriving how blockchain can support them

Prepmasters Institute **Taipei, Taiwan**
AI & Teaching Assistant **May 2023 - July 2023**

- Implemented an AI-powered algorithm to generate SAT tests closely resembling released SAT questions
- Led classes of 30 students in teaching math concepts, fostering a dynamic and engaging learning environment

SKILLS AND INTERESTS

Programming Languages: Python, C, Java, JavaScript, Ruby, HTML, CSS, SQL (PostgreSQL), R
Skills and Tools: Git, ReactJS, Express.js, MongoDB, NodeJS, Redux Toolkit, JWT, Rails, Docker, Postman, Figma
Languages: English (Native), Chinese (Native)