Scarlett (Cheng) Huang

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Education

Carnegie Mellon University | **Pittsburgh, PA**
B.S. in Information Systems and Computer Science | *May 2027*

Overall GPA: 3.77/4.00
Related Coursework: Fundamentals of Programming, Principles of Imperative Computation, Discrete Mathematics, Multivariate Analysis, Probability, Database Design and Development, Designing Human-Centered Software, Mobile Web Design and Development, Functional Programming, Theoretical Computer Science, Application Design and Development

Experience

Human Computer Interaction Institute, Carnegie Mellon University | **Pittsburgh, PA**
AI Math Tutor Programmer & Researcher | *Apr. 2024 – Present*

- Built Python pipelines analyzing 100K+ records, improving data retrieval by 30%
- Developed AI models detecting over/under-reliance using visualization tool
- Conducted user testing with 300+ students, collaborating with the online math tutor platform PLUS+ to evaluate AI solutions for university-level math courses, resulting in improved performance for over 50 students

Institute of Modern Distance Education | **Hong Kong**
Inventor of Patented Eye-tracking Device | *Feb. 2021 – June 2023*

- Designed a 3D-printed eye-tracking device integrated with a lamp to monitor and record eye movements, enabling real-time analysis of focus and reading behavior
- Secured 3 national patents in software copyright and product design
- Presented findings at HKMU and published a first-author paper in the ICOIE conference based on research on eye-tracking index using the GazeQuiz program and ILS model; analyzed data via Tobii Stream Engine SDK in C and C++ interfaces
- Managed trials in 4 middle schools with 200+ students, conducted reports on student behavior patterns, resulting in a 47% improvement in students' academic performance and engagement metrics

Personal Projects

Overcooked 2 | **Pittsburgh, PA**
Individual Python Project with AI Pathfinder | *Dec. 2023*

- Built an interactive kitchen game based on Nintendo game Overcooked2, featuring randomly generated orders, real-time score tracking, and an intuitive user interface for an immersive gaming experience
- Implemented AI-driven features, including complex algorithms like Dijkstra's and A* search, to enable intelligent pathfinding and effective multi-agent collaboration, pioneered functionalities not present in the original game

Pittsburgh Labor History Trail Website | **Pittsburgh, PA**
Collaboration with the Battle of Homestead Foundation | *Nov. 2024*

- Designed and implemented responsive HTML/CSS layouts for a non-profit organization with Bootstrap for grid-based layouts, media queries, and reusable components, ensuring cross-browser compatibility and mobile-first formatting
- Hosted 15 user testings from diverse age groups, collecting valuable feedback to improve site usability and overall design

Leadership

Vice-President Marketing of Professional Fraternity Eta Omega Chi | *Dec. 2023 – Dec. 2024*

- Built chapter website, overseeing UI/UX design, front-end coding, and deployment, resulting in over 1,000 monthly views

Technologies & Skills

Programming Languages: Python, C, SQL, Pandas, HTML, CSS, R, Ruby, SML
Languages: Mandarin (native), English (professional), Cantonese (intermediate)
Activities: Competitive Badminton Player – 2023 Eastern Collegiate Team Badminton Championships (D1 player)