Michelle **Ren Zhang**

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EDUCATION

Cornell University   Ithaca, New York

Master of Engineering in Computer Science   Expected December 2024

- Relevant Coursework: Software Systems Engineering, Computer Graphics, Optimization, Database Systems

Bachelor of Science in Hotel Administration, Minor in Computer Science, Concentration in Finance   May 2023

- Leadership: Design Lead at BigRed//Hacks (Spring 2021—Present)
- Teaching Assistant for HADM 2010: Quantitative Analysis (Fall 2021) & HADM 3710: Python Programming (Fall 2021)
- Relevant Coursework: Object-Oriented Programming & Data Structures, Functional Programming, Computer System Organization, Foundations of Artificial Intelligence, Operating Systems, Discrete Mathematics

WORK EXPERIENCE

Cornell University, Digital Fashion and Body Scan Research Lab   Ithaca, New York

Summer Research Assistant   June 2023—Present

- Working under Dr. Fatma Baytar in 3D body scan data analysis and virtual/augmented reality applications in digital prototyping and virtual fit analysis
- Developing VR application with Unity and C# to simulate digital prototyping and virtual fitting
- Created Python program that manipulates 3D data and outputs ratio calculations to inspect internal structures and streamline workflow, reducing 3D object scan processing time by 85%
- Wrote Bash script that performs file I/O operations for batch processing, reducing file retrieval time by 125%
- Tested and trained regression models that predict hip length with 90.53% accuracy for garment mass customization
- Debugged, redesigned, and implemented dynamic content display to online experiments with JavaScript and HTML/CSS

Cornell University, Open Borders CoLAB   Ithaca, New York

Undergraduate Research Assistant   October 2022—May 2023

- Developed a Spotify data scraper tool that writes data to spreadsheets based on user input using Python and Spotify Web API, improving data collection efficiency by 200%
- Reduced data scraper's execution time by 75% by implementing multiprocessing
- Coded front and backend of web application that integrates data scraper with Django to improve user accessibility
- Designed and contributed to implementation of frontend and UI of lab website using HTML/CSS; designed new lab logo
- Planned migration of scraper to Java to ensure code maintainability and enhance performance

La Quinta By Wyndham   Santiago, Chile

Analytics Intern   June 2021—August 2021

- Developed VBA macros for file and data manipulation and wrote custom VBA formulas to determine industry KPIs
- Built graphical representations of sales data and occupancy trends using Tableau and Excel to present notable findings
- Automated work shift management processes and employee attendance records using SQL queries

PROJECTS

RISC-V Simulator/Interpreter | C, Logism

- Simulated a CPU under RISC-V architecture that processes assembly language into binary instructions in C
- Implemented simulation of a 32-bit single-cycle processor in Logisim that processes a subset of RISC-V instruction sets

Camel Chess | OCaml

- Collaborated with 4 developers to create a multiplayer chess game with advanced movement detection
- Implemented Perft test algorithm using recursive depth-first search and designed OUnit test suite to ensure correctness

Froggit | Python

- Developed personalized recreation of the Frogger arcade game with an interactive GUI
- Programmed animation through coroutines and configured game to include hitboxes and multiple levels

SKILLS

PROGRAMMING LANGUAGES: Python, Java, C, C#, SQL, HTML, CSS, JavaScript, TypeScript, VBA, OCaml
TECHNOLOGIES: Pandas, Scikit-Learn, NumPy, Matplotlib, CVXPY, Django, Git, JMP, Mathematica, Unity, Docker
SPOKEN LANGUAGES: English (Fluent), Spanish (Native), Mandarin (Intermediate), Japanese (Basic)