Caden Howell

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Education

Northwestern University, Evanston, IL — Sep. 2019 - Present

Bachelor of Science in Computer Science, anticipated 2023
Master of Science in Computer Science, anticipated 2023 via BS/MS program
Cumulative GPA: 3.86/4.00 | Major GPA 4.00/4.00

Relevant Coursework

Machine Learning | AI Programming in LISP | Statistical Language Modeling | Creative Applications in ML

Work

Softhard.io, Hartford, CT — Jun. 2021 – Sep. 2021

Data Analytics Intern

- Cleaned global database responsible for outputs of 209 sensors with MySQL and Python scripting to modernize sensor event recall and analysis, curtailing multi-hour debugging sessions from workflow
- Updated graphical interfaces contingent on weekly client feedback and organized with team to promote unified layout across six interfaces
- Created interactive, graphical interfaces with DAX, PowerBI, and Power Query to inform client on usage trends of infrastructure with 1.7 thousand daily users leading to validation of peak occupancy hours
- Investigated approaches for over-the-air firmware updates to existing IoT infrastructure and implemented low profile server hosting to meet administrative goals of efficiency and simplicity in design
- Spearheaded hardware and software testing of ESP32 microcontroller using C and Arduino framework to validate functionality and stability for use in IoT data collection

Ravinia Festival, Highland Park, IL — Aug. 2019 – Sep. 2019

- Coordinated sale/distribution of lawn chairs and furniture for concerts with upwards of 10,000 attendees

Relevant Experience

Music for the Moment

- Organized biweekly meetings with dev team to communicate progress and plan subsequent design steps
- Pioneered sentiment to vector mapping and integrated auxiliary APIs, including IBM Watson, into Python codebase to catalyze low computing cost analysis of emotional content in music and speech

Language Modeling Research

- Coauthored pseudo-novel research paper exploring parameter modification in attention mechanism of GPT-2 like decoder model
- Trained 30 unique models on WikiText-2 with PyTorch based transformer library to perform language modeling and established benchmarking to determine ideal model parameters

Java Projects

- Constructed an orbital physics simulator and two GUI-enabled games using graphics libraries (JavaFX, Java Swing), build environments (Maven), multithreading, object-oriented practices, and Java 9 modular design

Formula SAE, Electronics Team

- Headed project to discover, code, and test budget friendly display interface and collaborated with chassis team to ensure proper device sizing and installation
- Championed use of I2C communication protocol to decrease I/O usage by 67%, reduce project costs by 25%, and allow for future scalability of design with advanced LCD displays

Achievements

Deerfield High School Computer Science Achievement Award — 2019

Illinois Council of Teachers of Mathematics Student Achievement Award — 2019

Skills

Languages: Java | Python | C++ | DAX | LISP

Other: Object-Oriented Programming | Data Structures and Algorithms | JetBrains IDEs | PowerBI