Sunny Wang

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Education

University of Michigan **Sep. 2020 - May 2024**

BS in Computer Science and BA in Music *Ann Arbor, MI*

Relevant Coursework: Machine Learning, Computer Vision, Algorithms and Data Structures, Intro to Computer Organization, Foundations of Computer Science, Intro to Artificial Intelligence, Conversational AI, Applied Linear Algebra, Multi-variable Calculus, Intro to Data Science

Experience

Automation Intern **May 2023 - August 2023**

Viasat *Carlsbad, CA*

- Designed, and implemented an AI chatbot for corporate clients, optimizing the reservation process for virtual sandboxes. Currently serves over 10,000 customers, significantly improving user experience and cutting out 100% of the operational expenses
- Developed a supervised learning script driving continuous refinement of the chatbot model, increasing model accuracy by 42% after training on currently available data
- Revitalized the chatbot NLU pipeline with task-tailored processes, resulting in a 50% faster response time and a 9.5% increase in response accuracy

Software Engineering Intern **May 2022 - August 2022**

Instahub *Philadelphia, PA*

- Optimized the backend dataflow by designing a new data-processing software, written in Axon and built on SkySpark, using machine learning techniques to produce KPI's from data logger info. Increased dataflow efficiency by 20%.
- Led a team of 4 developers in weekly team meetings and discussions to further refine the server's data-processing capabilities by adding various data visualizers and the ability to examine different data types. Collaborated through EC2 and SQL
- Analyzed raw graph data from motion sensors leveraging machine learning techniques with Tensorflow to improve sensor response accuracy

Student Coach **June 2022 - September 2022**

Joy of Coding - UM *Ann Arbor, MI*

- Coached online python course with over 1700 students from all over the world, contributing to an 85% student pass rate
- Met with students over video calls to help improve understanding in key concepts as well as work through bugs in written code

Personal Projects

TuneBot | *Python3, CSS, HTML* **March 2023**

- Engineered a GPT-2 based AI model for song lyric generation, incorporating genre, artist, and subject inputs; further improved by introducing song structures and rhyming schemes for authenticity
- Designed a user-centric front-end website interface, ensuring seamless backend integration for efficient user experience
- Managed extensive data collection and formatting, employing diverse training methodologies and parameters to optimize and achieve genuine song output

Chess Agent | *Python3, Chess* **October 2022**

- Developed a chess agent using the Minimax algorithm and a graph search structure to determine optimal moves on any board. Boosted performance with $\alpha\beta$ pruning, achieving a runtime reduction of over 99%

Path Finding Agent | *Python3, Numpy, MatPlotLib* **September 2022**

- Built a path-planning AI using graph search to navigate through obstacle maps, integrating algorithms like A*, DFS, BFS, and uniform-cost search
- Optimized search efficiency with iterative deepening techniques

Technical Skills

Languages: C++, Python, C, Java, R, Axon, Lua, Rasa LaTeX
Frameworks/Libraries: Pandas, NumPy, TensorFlow. Scikit-learn, Matplotlib
Developer Tools: Git, AWS, Linux, Ubuntu, PyCharm, Lucidchart

Affiliations

UMARV Team Lead: Created a moving simulated robot model that traversed a maze from start to end applying the A* search algorithm. Led the process of transferring the software from simulation to physical robot, collaborating with a sub-team of 15 students.

Michigan Hackers: Analyzed and optimized open-source Project Minetest to minimize bugs and revamp the player experience with a small team of fellow students using C++, Lua, and Unity.