

# Simon Wang

Potomac, MD | [wang.c.simon@gmail.com](mailto:wang.c.simon@gmail.com) | <https://simoncwang.github.io>

## Skills

**Programming:** Python, Java, HTML, JavaScript (vanilla/React/Node), C, C# (Unity), C++, SQL  
**ML/AI:** PyTorch, HuggingFace, AutoGen, SmolAgents, MLflow, OpenAI API, Langchain, Gradio  
**Tools:** GitHub, VSCode, AWS, Docker, Unity, Google Suite, MS Office, MATLAB, Vercel  
**Certifications:** Hugging Face AI Agents Course

## Education

**University of Maryland, College Park, MD**

**M.S., Computer Science** — May 2025 | GPA: 3.56/4.0

**B.S., Computer Science** — Dec 2023 | GPA: 3.52/4.0

University Honors, Presidential Scholarship

## Work Experience

**Research Assistant** | University of Maryland | College Park, MD

*Feb 2025 – Present*

- Working on project leveraging multimodal LLMs, RAG, and multi-agent frameworks like Microsoft Autogen for event sequence analysis and visualizations of domain-specific datasets
- Developing a UI for AI-assisted data analysis using Autogen, FastAPI, React, and Python

**Student Initiated Course Facilitator** | University of Maryland — College Park, MD

*Jan 2023 – May 2023*

- Co-taught course on creating custom shaders in Three.js (CMSC398K)
- Prepared course materials and lectured about linear algebra needed for computer graphics
- Graded and gave feedback on homework and coding assignments

**Software Development Engineer Intern** | Amazon | Seattle, WA

*May 2022 – Aug 2022*

- Developed quality assurance tools to improve Amazon's Choice recommendation system
- Used Java, Apache Spark, and AWS EC2/S3 to push and test code on Amazon databases
- Collaborated with 20+ software engineers in fast-paced environment with daily meetings

## Technical Projects

**Wildlife Analyzer MLOps Dashboard** | Jun 2025

- Built a modular MLOps dashboard with Streamlit UI for analyzing wildlife observations from the iNaturalist API using a reproducible, multi-stage data pipeline
- Implemented stages for data fetching, preprocessing, feature engineering, clustering (KMeans), and LLM-based summarization to extract insights
- Integrated local MLflow tracking for experiment logging and metrics monitoring; implemented cloud log storage via AWS S3 to support scalable tracking

- *GitHub*: <https://github.com/simoncwang/wildlife-analyzer>
- *Public Streamlit Demo*: <https://wildlife-analyzer-dashboard.streamlit.app/>

#### **LLMSpatialLayout** | Jan 2025

- Improvement and extension to LLM-based spatial layout generation of the paper: [Grounded Text-to-Image Synthesis with Attention Refocusing](#)
- Leveraged structured outputs through LLM APIs to create simplified and reliable generation
- Reproduced evaluations using 200+ prompts from paper, improving format accuracy to 100% for all (previous high 98.5%), layout validity by over 3% on small models like Llama2:13B
- *GitHub*: <https://github.com/simoncwang/LLMSpatialLayout>

#### **MMO: Multimodal Multi-agent Organization** | Oct 2024 – Dec 2024

- Individual course project for Multimodal Foundation Models (Prof. Jia-Bin Huang)
- Developed a multi-agent framework using multimodal large language models (MLLMs), using OpenAI gpt-4o to coordinate open-source MLLMs through Huggingface Transformers
- Produced an improved benchmark evaluation tool to mitigate inconsistencies in current benchmarking methods to enable more robust comparison of MLLMs
- *GitHub*: <https://github.com/simoncwang/MMO>

#### **Diffusion-based Generative Video Consistency** | Jan 2024 – May 2024

- Investigated angles to improving state-of-the-art deep learning topics in a group of 2
- Conducted extensive literature review on diffusion-based video generation and editing
- Proposed and tested a new approach improving upon and combining previous techniques such as neural layered atlases and Uni-ControlNet
- Participated in a within-course mock-conference with two rounds of anonymous peer-reviews and ultimately completed a paper that was accepted by the Professor and TAs
- *Report with rebuttal*: [https://simoncwang.github.io/documents/CMSC720\\_Rebuttal.pdf](https://simoncwang.github.io/documents/CMSC720_Rebuttal.pdf)

#### **VR Classroom** | Jan 2024 – May 2024

- Ideated and proposed project investigating the potential applications of VR for education
- Led a team of 5 to develop a Unity application to run on the Meta Quest III over the course of a semester by delegating tasks and collaborating with teammates
- Conducted an IRB-approved user study of 30+ participants, presented findings to class and wrote a technical report summarizing the research process and impacts
- *GitHub*: <https://github.com/simoncwang/virtualclassroom>

## **Publications**

Chen Chen, Hannah K. Bako, Peihong Yu, John Hooker, Jeffrey Joyal, Simon C. Wang, Samuel Kim, Jessica Wu, Aoxue Ding, Lara Sandeep, Alex Chen, Chayanika Sinha, Zhicheng Liu. "VisAnatomy: An SVG Chart Corpus with Fine-Grained Semantic Labels." arXiv preprint arXiv:2410.12268 (2024)

## **Relevant Coursework**

Multimodal Foundation Models, Deep Learning, Database Systems, Human-Computer Interaction, XR, Advanced Computer Graphics, Game Programming, Data Visualization, Advanced Algorithms, Data Structures, Applied Probability & Statistics, Linear Algebra, Calculus III