Eris Yunxin Gao

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EDUCATION

Columbia University, Barnard College — New York, NY

B.A. in Computer Science, minor in Architecture — GPA 3.91/4.00 — *Expected May 2024*

- Relevant Coursework: Computer Networks, Databases, Computer Vision, Computer Graphics, Pixel Processing, Creative Embedded Systems, Computational Sound, Data Structures and Algorithms

EXPERIENCE

Undergraduate Researcher/Software Developer — Sept. 2023 – Present

Columbia Graphics and User Interfaces Lab / Columbia Lamont-Doherty Earth Observatory — *New York, NY*

- Developed VR application in Unity/C# using the MRTK library to visualize polar ice sheet layers in 3D
- Utilized Computer Vision to implement automated ice layer tracing for VR/AR headsets like the Microsoft HoloLens & Meta Quest 2/3

Technology Summer Analyst — June 2023 – Aug. 2023

Morgan Stanley — *Baltimore, MD*

- Developed in Python an AI Auditor Assistant for the Internal Audit department using the LangChain library and open source LLMs
- Reduced 30% of time spent in the audit planning phase on developing control tests by internal auditors
- Tuned LLMs using few shot learning and prompt engineering with 300+ pages of the firm's internal audit documents to provide unique and firm-specific answers to queries on audit methodology

Undergraduate Researcher — Jan. 2023 – May 2023

The Accessible and Accelerated Robotics Lab at Barnard College — *New York, NY*

- Implemented cross-platform mapping & localization system for a mini quadruped robot in C++, Java, and Python
- Wrote script using OpenCV library to locate robot from infrared video camera streams
- Automated robot navigation using pathfinding algorithms based on the robot's real time location

Teaching Assistant/Peer Tutor — Jan. 2023 – Present

Columbia University — *New York, NY*

- Hosted weekly tutoring sessions for groups of 1-3 students for Discrete Math and Advanced Programming classes
- Held office hours, ran weekly labs, and organized workshops for Intro to CS class (in Python, 80+ students) and Creative Embedded Systems class (in C++, 20+ students)

PROJECTS

AI CS Advisor – 1st Place at Columbia Hackathon | *Python, Flask, OpenAI, WebDev* — September 2023

- Developed a full-stack web-based AI chatbot that provides answers to Columbia undergraduate CS advising questions, reducing time spent on advising by 70% for CS professors
- Customized AI model by creating vector embeddings of core CS advising documents
- Made calls to OpenAI API through Python/Flask backend connected to an interactive JavaScript frontend

Abortion Resources Database Web App | *PostgreSQL, Python, Flask, Jinja* — March 2023

- Developed a full-stack web app that queried a PostgreSQL database providing users with a comprehensive real-time list of abortion resources to improve abortion accessibility

"Electric Meat" – A Soft Silicone Touch Screen | *C++, Java, OpenCV, Blob Detection* — May 2023

- Created a tri-layered artificial silicone skin using mutual capacitive touch to operate as a soft touch screen
- Used OpenCV and Blob Detection libraries to detect hand gestures and pressure from self-designed sensors
- Wrote C++ code to program microcontroller to receive and send capacitive touch signals, used Java for further signal processing and visualization

TECHNICAL SKILLS

Languages: Java, Python, C/C++, C#, SQL (Postgres), JavaScript, HTML/CSS
Developer Tools: UNIX, Git, Valgrind, Relational Databases, Google Cloud Platform, Unity3D
Design Tools: Adobe Suite, Figma, Touch Designer, Rhino 3D, Virtual and Augmented Reality
Libraries: OpenCV, OpenGL, NumPy, Matplotlib, pandas