

# Eris Yunxin Gao

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## EDUCATION

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### Columbia University, Barnard College

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

New York, NY

*Expected May 2024*

## PROJECTS

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### “Electric Meat” – A Screaming Soft Silicone Sensor | *C++, Java, OpenCV, Blob Detection* May 2023

- Created a tri-layered artificial silicone skin using embedded conductive threads to operate as a soft sensor
- 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

### 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

### Painting Sonifier | *Java, Java MIDI Library, Processing* April 2023

- Won a grant of \$500 for the Barnard Computational Science Center Visualization Wall Competition
- Wrote interactive program in Processing to allow users to create music compositions from a certain selection of pixels in a painting displayed on a touchscreen, encouraging discourse on accessibility and connecting the visible to the audible

### Interactive Confetti Projection | *TouchDesigner, Microsoft Kinect Azure* April 2023

- Created an interactive confetti floor with custom particles that would flow and dispel whenever participants moved
- Used Touch Designer and Kinect Azure to locate people, detect optical flow, and simulate particle movement

## EXPERIENCE

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### Undergraduate Researcher/XR 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

### 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

### Visual Design Intern May 2022 – July 2022

*Verité Inc* *Amherst, MA*

- Developed e-learning modules on legal rights for migrant workers in China through storyboarding and animation
- Designed logos, icons, informational charts using Adobe Illustrator
- Tested e-learning modules for usability and user experience, revised learning platform

### Shop Coach May 2022 – July 2022

*Center for Design, Hampshire College* *Amherst, MA*

- Assisted students with using shop tools including the drillpress, band saw, belt grinder, spot welder, etc.
- Worked on shop projects starting from design to fabrication; developed skills in welding & woodworking

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, C#, Java, SQL, JavaScript, HTML/CSS, OpenCV library, OpenGL library

**3D, AR/VR, Digital:** Rhino 3D, Unity3D, Adobe Suite, Figma, Touch Designer

**Physical Fabrication:** Arduino, ESP-32, Raspberry Pi, 3D Printing, Woodworking, Laser Cutting