Alexander Sorescu

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EDUCATION

Illinois Mathematics and Science Academy   Aurora, IL
High School Degree   June 2025

RELEVANT COURSEWORK

CS Seminar: Machine Learning | Object-Oriented Programming | Computer Science Inquiry | Modern Physics (Quantum and Particle Physics)

WORK EXPERIENCE

Feinberg School of Medicine, Northwestern University   Chicago, IL
Lab Researcher   June 2023 - April 2024
- Built an image sequencing pipeline for the Goyal lab regarding pancreatic cancer cells, which used Cellpose, Python, and computer vision algorithms (e.g., contour tracing and spatial gradient).
- The pipeline was used to identify whether or not and when Sotorasib and Gemcitabine-treated cells were turning their signal to their pathway for proliferation back on. It was then combined with another pipeline to determine what genes were being expressed during the time of the signals to determine what genes were creating resistances.
- Collaborated with 2 other lab members to collect the images.

OpenMind   Aurora, IL
Co-Founder/COO   December 2022 - Present
- OpenMind is a mental health organization that offers comprehensive resources and services to support individuals in their mental wellness journey. The organization offers a range of traditional mental health resources, such as therapy and support groups, as well as cutting-edge technology-based solutions.
- The flagship offering is an AI-powered mental health **chatbot therapist app named Quinn**, designed to provide accessible, on-demand support for individuals experiencing mental health challenges.
- Raised over **$10,000** from competitions and grants.

PROJECT EXPERIENCE

Tracking Single-Cell Segmentations, *Personal Project*   December 2022 - January 2023 (Updated April 2024)
- Created a Google Colab notebook that can be used to track the **trajectory of moving cells** in tiff stacks (a tiff stack is a group of images with a similar frame of reference).
- Utilized **Cellpose** to segment each frame of the tiff stack, which generated masked images of each raw image, allowing us to quantify multiple metrics from the masks.
- I then was able to use Trackpy to track the trajectory of each cell over the tiff stack. However, I needed to correct the overall drift, which was done also using Trackpy.

OpenMind Website, *OpenMind*   March 2023 - Present
- Help create and design the organization's website from scratch
- We mainly used JavaScript, React, and Astro to build all of the interactive features of the website
- Implemented a Content-Management-System for the article section, so that the articles would be able to update themselves once we publish new articles on a backend server.

Mental Health Facilities Map, *OpenMind*   February 2024 - March 2024
- Created a map of all the mental health facilities in Illinois that allows users of our application to receive treatment. I also designed it to only show facilities within a 10-mile radius of the user to ensure that they find the nearest treatment.
- Researched client needs and developed a layout to suit functionality requirements. I specifically designed the map to only incorporate mental health facilities from a national database taken from the *Substance Abuse and Mental Health Administration.*
- Led project by organizing meetings, tracking progress, and facilitating discussions with IMSA administrators and clinical professionals.

6502 Chip Emulator, *Personal Project*   December 2023 - April 2024
- Mimicking the 6502 Chip's initial design. Capable of visualizing the execution and debugging of an assembly-language Fibonacci program.
- This project was coded in C#

vitalDetect, *Personal Project*   March 2024 - Present

Mixed-Reality Application, *OpenMind*   April 2024 - Present
- Used Unity to create a mixed reality application for my organization 'OpenMind.' The application is currently in the process of getting a license from Meta to be able to upload the application to the Oculus and MetaQuest 2-3.
- Generated an avatar for our Quinn AI to help the user feel more comfortable with opening up their emotions to an AI.
- Provided the ability for users to speak directly into the headset and then use speech recognition to translate those words into text to input into Quinn (our AI).
- If users choose not to speak to our AI directly, we implemented *Meta's* virtual keyboard into our application to at least provide the user with an alternative option to speak.

TECHNICAL SKILLS
Coding Languages: Python (Cellpose & Stardist), Java, C++, C#, Unity, JavaScript (React & Astro)
World Languages: English, Mandarin II, Spanish II

INVOLVEMENT EXPERIENCE
PROMISE Program, *Tutor/Teaching Assistant* | Aurora, IL   January 2023 - April 2024
- Tutored students in either 7th or 8th grade regarding computer science. We specifically focused on teaching the students how to build their machine-learning model to predict various problems.
- We also lead classes that involve UI/UX development for their websites.
- Assisted in teaching multiple classes to both 7th and 8th graders regarding leadership and how to be a leader in a professional environment.

Code Society, IMSA, *General Member* | Aurora, IL   December 2023 - Present
- Obtained membership in the Code Society club at my school, specifically in the education department.
- Work on small projects for the club involved teaching students outside of the classroom how to code and different coding topics