

# Sam Johnson-Lacoss

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## EDUCATION

### Carleton College

Aug. 2020 – June 2024

*Bachelor of Arts in Computer Science, Minor in French*

*Northfield, MN*

- **GPA:** 3.95 Cumulative, 4.0 in Major
- **Awards:** Magna Cum Laude,  $\Phi$ BK honors society, Dean's List (2020-2021, 2022-2023)
- **Relevant Courses:** Linear Algebra, Data Structures, Discrete Mathematics, Computer Systems, Programming Languages: Design and Implementation, Algorithms, Computability & Complexity, Cryptography, Machine Learning, Explainable Artificial Intelligence

## EXPERIENCE

### Undergraduate Researcher

June – Sep. 2023

*California Institute of Technology*

*Pasadena, CA*

- Developed a taxonomy for visualization and manipulation of data in desktop- and immersion-focused extended reality spaces
- Collaborated with a cardiologist, a radiologist, and data scientists to optimize interactions with multi-dimensional data in lab and patient-facing healthcare environments

### Undergraduate Research Assistant

Jan. – Mar. 2023

*California Institute of Technology*

*Pasadena, CA*

- Built web-hosted application for data visualization and object manipulation
- Communicated with radiologists and data scientists to prototype in-depth and accessible interaction systems for the 3D visualization of data in virtual reality

### Academic Technologist Student Assistant

Jan. 2021 – June 2024

*Carleton College*

*Northfield, MN*

- Responsible for the creation of approximately 50% of Carleton's LMS documentation and teaching resources
- Solved over 100 requests ranging from individual issues to campus-wide incidents
- Educated staff, faculty, and students through workshops and courses on user-centered design, Extended Reality, and technology's role in education
- Conceptualized, organized, and constructed the system for Carleton College's academic and public-access Extended-Reality spaces
- Interfaced with Performing Arts department to build an Augmented-Reality theater, modernizing its immersive dance environment

## PROJECTS

### Explainable AI: Breaking Down the Black Box | *PyTorch, Tensorflow, Docker, JavaScript, FastAPI, Git*

- Helped lead a team of undergraduate researchers in an exploration of explainable machine learning techniques
- Administered a user study on public understanding of- and trust in explainable machine learning
- Hosted online: [cs.carleton.edu/cs\\_comps/2324/explainable-ai/final-results](https://cs.carleton.edu/cs_comps/2324/explainable-ai/final-results)
- **Learning goals:** Collaborative research, team leadership, machine learning research

### Schillify | *Python: Flask/Numpy, HTML/CSS, Javascript, PostgreSQL, HTTPS*

- Designed and implemented a website to visualize and manage songs from Spotify based on their audio features
- Interfaced with Spotify's authentication system and API to queue songs to users' accounts
- Repository here: [github.com/nli00/CS257Final](https://github.com/nli00/CS257Final)
- **Learning Goals:** Using with third-party APIs, honing CSS skills, scalable projects

### Community Boating Center Tracker | *Flutter/Dart, Firebase, Google OAuth*

- Collaboration with the community boating center of Bellingham, WA
- Created two-sided platform-agnostic app for tracking boat rentals in real time from centralized console
- Repository here: [github.com/levshuster/community-boating-center-voluntary-tracker](https://github.com/levshuster/community-boating-center-voluntary-tracker)
- **Learning goals:** Hosting web applications, GitHub Actions, geographic overlays

## SKILLS

**Languages:** English, French, Java, Python, C/C++/C#, JavaScript, HTML/CSS, Rust, Assembly, Golang, SQL, Dart

**Frameworks:** OpenXR, WebXR, Unreal Engine, Unity, Node.js, WordPress, ArcGIS, Flutter

**Developer Tools:** Git, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, npm

**Libraries:** Pandas, NumPy, Matplotlib, Kivy, THREE.js, AFrame.js, Vite.js, Tensorflow, PyTorch, Ultraleap, CPAL, Dioxus