Avery **Gosselin**

Computer Scientist · Neuroscience Student

Zurich, Switzerland

+1-207-487-1571 | avery.gosselin2000@gmail.com | averyGosselin | Avery Gosselin

Profile

Interdisciplinary neuroscience M.Sc. student at ETH Zurich and UZH, combining software engineering and neurotechnology. Experienced in applying computational methods to neurorehabilitation, medical imaging, and translational research.

Education

University of Zurich / ETH Zurich — *Zurich, Switzerland*

M.S. In Interdisciplinary Brain Science — *Sep. 2023 - Present*

- **Master's Thesis:** *NRMotion: A Configurable Markerless Motion Tracking System for Real-Time Neurorehabilitation Applications*

University of Maine — *Orono Maine, USA*

B.S. in Computer Science with **High Honors, GPA: 3.98** — *Sep. 2019 - May. 2023*

- **Honors Thesis:** *One Theme, Infinite Interpretations*, exploring perspective differences through photo sharing.

Skills

Programming	Python, Java, JavaScript, C, Lisp, LaTeX
Frameworks & Tools	Git, AWS, React, React Native, GitHub Actions, Figma
Scientific & Imaging Tools	OpenCV, 3D Printing, FIJI, Ilastik, MMPose
Concepts	Neuroscience, Rehabilitation, BCI, Computer Vision, Medical Imaging
Languages	English (native), German/Italian/French (beginner)

Experience

Skaaltec | ETH RELab — *Zürich, CH*

Internship — *Oct. 2025 - Present*

- Collaborating with the software team to align existing neurostimulation software with IEC 62304 medical device requirements.
- Translating regulatory requirements into practical development milestones and workflows for an agile team.
- Developing clear, maintainable documentation and templates to support sustained regulatory compliance across technical and non-domain teams.

.Neurorestore — *Lausanne, CH*

Master's Thesis — *Feb. 2025 - Sep. 2025*

- Developed a modular, real-time (10FPS) motion tracking pipeline (NRMotion) using monocular and binocular video for 3D human pose estimation.
- Validated the pipeline in closed-loop neurostimulation experiments, where kinematics guided real-time optimization of stimulation parameters.
- Contributed to ongoing clinical workflows, offering technical support and data analysis tools for neurorehabilitation sessions.

ETH BMDS Lab | ETH Kleele Lab | UZH TDA — *Zürich & Lausanne, CH*

Lab Rotations (ETH/UZH) — *Feb. 2024 - Jan. 2025*

- **Biomedical Data Science Lab (ETH), Zürich. (Nov. 2024 – Jan. 2025)**
  Led development of a literature review on large language models for clinical outcome prediction with time-series data; synthesized key insights from Bits to Breakthroughs 2024 to guide future research.
- **Kleele Lab (ETH), Zürich. (Sep. 2024 – Nov. 2024)**
  Built a multichannel mitochondrial imaging analysis pipeline (Python, Ilastik, FIJI, Euler cluster); authored user docs; trained lab members to improve processing efficiency and reproducibility.
- **Therapy Development Accelerator (UZH), Zürich. (Feb. 2024 – May 2024)**
  Conducted market research on neurotech needs for post-stroke rehab; interviewed survivors and stakeholders across academia, industry, and clinics; exposure to early-stage biotech strategy.

Servant Heart Research Collaborative — *Orono Me | Remote*

Student Developer — *Sep. 2019 - June 2023*

- Developed an educational exam prep tool deployed both via AWS (online) and Raspberry Pi (offline) to support students in Sierra Leone
- Designed and maintained a cost-efficient AWS-based backend architecture tailored for underserved regions
- Organized teams of other developers and stakeholders to outline system requirements and implement them within a professional product.

Lab for Convergent Science

Orono ME

Undergraduate Researcher

Sep. 2021 - May 2023

- Performed 3D printing research developing human biomimetic phantoms for radiation dosimetry using fused deposition modeling
- Engineered workflows using the M3D QuadFusion printer to blend materials (e.g., copper-fill, low-density plastics) for accurate CT scan profiles
- Presented at the SPIE Medical Imaging Conference (Feb. 2023)

University of Maine Computer Science Capstone

Orono ME

Team Member

Sep. 2022 - May 2023

- Built a React-based web app for a private client as part of a student team
- Translated client needs into technical requirements and documented implementation plans following an agile development strategy
- Presented development milestones and outcomes to the client and course cohort

Foundation Medicine

Remote | Boston MA

Software Engineering Intern

Jun. 2022 - Aug. 2022

- Worked alongside an engineering team to implement a Java integration API using Spring, Maven, and Kafka
- Collaborated in-person and remotely with an agile engineering team on core infrastructure projects
- Co-developed and pitched a full-stack web application (React/Node.js) in a cross-functional intern team

Publications

Toward Three-Dimensional (3D) Human Biomimetic Models for X-Ray Radiation Dosimetry and Biomedical Image Analysis

San Diego CA, USA

First Author

Feb. 2023

- Produced 3D-printed biomimetic phantoms aligned with CT attenuation profiles.
- Accepted and presented at SPIE Medical Imaging 2023 DOI:10.1117/12.2655789

Lattice-based Contextual Integrity Analysis of Social Network Privacy Policies

Orono ME, USA

Co-Author

Sep. 2021

- Applied a formalized analysis method to review social media privacy policies for misleading verbiage.
- Accepted at ESPRE 2021 DOI:10.1109/REW53955.2021.00070

Honors & Awards

2023	**Honors Thesis: High Honors**, University of Maine	*Orono, ME, U.S.A*
2019-2023	**Maine Top Scholar**, University of Maine	*Orono, ME, U.S.A*
2021	**James S Stevens Outstanding Junior Award**, University of Maine	*Orono, ME, U.S.A*
2019-21	**Presidential Scholar**, University of Maine	*Orono, ME, U.S.A*

Presentations

SPIE Medical Imaging Conference

San Diego CA, USA

Presenter

Feb. 2023

- Presented first-author research: Toward 3D Human Biomimetic Models for X-Ray Radiation Dosimetry and Biomedical Image Analysis
- Shared methods and results on tissue-mimicking 3D printing for medical imaging dosimetry

Technical Workshops – University of Maine

Orono, ME, USA

Workshop Leader

Nov. 2022 – Jan. 2023

- Led a workshop on React introducing students to modern frontend development, including environment setup and hands-on coding
- Taught version control fundamentals in a Git/GitHub workshop, covering branching, commits, and collaborative workflows

Interests

`Alpine Skiing` `Hiking` `Gardening` `DIY Electronics` `3D Printing` `Saxophone` `Computer Vision` `Language Exchange` `Ice Skating` `Reading` `Traveling` `Eating` `Kayaking`