Julianna Lamm

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EDUCATION

Fordham University | *M.S Computer Science* | GPA 3.9   May 2025
University of California, **Berkeley** | *B.A Molecular and Cell Biology*   May 2020

WORK EXPERIENCE

Zhou Lab Fordham University - *Graduate Student Researcher*   Aug 2023 - May 2025
- Graduate student researcher building upon the Fruit Fly Brain Observatory to reconstruct and analyze brain circuitry from high-resolution biological datasets, contributing to the expansion of interactive neuroscience platforms
- Investigated deep learning approaches for segmenting brain structures from high-resolution imaging data, with a focus on adapting models to noisy, domain-specific datasets.

Dewpoint Therapeutics - *Data Science Research Associate II - Boston, MA*   Jan 2022 - Mar 2023
- Developed and maintained automated image analysis pipelines with integrated statistical validation to extract meaningful patterns from biological images, informing both experimental design and lab protocol optimization.
- Collaborated closely with data engineers and scientists to design, test, and deploy production-ready machine learning pipelines for object detection across large-scale microscopy datasets.
- Played a key role in shaping internal ML strategies by bridging cross-functional insights between the wet-lab and computational modeling.

Research Associate, Chemical Biology   May 2021 - Jan 2022
- Direct report to chemical biology team lead tasked with establishing target deconvolution platform that utilizes novel click chemistry techniques to identify and validate molecular targets
- Lead and manage operational efforts to establish partnerships with suppliers and CROs for the development of custom antibody repository

Ohana Biosciences - *Research Associate - Cambridge, MA*   Jun 2020 - Apr 2021
- Integral member of four-person team tasked with the identification, categorization, and standardization of unique sperm cell biological characteristics
- Conducted sperm DNA fragmentation and surface characterization assays for the scalable and quick identification of sperm fertility using cell surface biomarkers
- Collaborated with business and marketing team to identify relevant technologies and R&D competitive opportunities pertaining to male fertility

Lishko Lab - *Research Assistant - UC Berkeley, CA*   Sept 2019 - Jun 2020
- Independently developed and scripted an open-source, python-based Computer Assisted Sperm Analysis (CASA) that extracts sperm motility, count, hyperactivation, and progressivity using brightfield videos of sperm under standard microscope for senior thesis
- Aided graduate student in completion of PhD thesis, grant proposal writing, and lab meeting presentations
- Performed routine sperm motility analysis, sperm cytometric assays, qPCR, and mammalian cell culture

Amyris - *New Product Development Intern* Emeryville, CA   Jun 2019 - Feb 2020
- Gather, compile, and disseminate information on current legal limits and emerging controversy relevant to chemicals used in personal care and cosmetic industry
- Developed consumer driven and scientifically backed skin-care products using innovative and sustainable material science techniques

PROJECTS

SpermTrack - CNN-based Object Detection: Engineered a high-performance YOLOv8-based system to detect and track sperm across microscopy video frames. Customized model architecture and implemented empirical tuning strategies to ensure consistency across frames. Designed and executed ML experiments with iterative data inspection to improve detection robustness in a noisy biological context.

SpermClass - Automated Sperm Motility Analysis: Built an interactive data visualization dashboard to explore and compare sperm motility subtypes through unsupervised clustering and trajectory analysis. Designed with a focus on interpretability and experimental iteration using React, D3.js, Plotly, Framer Motion, and Scrollama. Enabled dynamic inspection of biological behavior to support empirical research and hypothesis generation.

Gouger – Rental Price Gouging Detection Tool: Developed a browser-based map tool to flag illegal rent hikes during natural disasters by combining web scraping and API integrations with HUD Fair Market Rent benchmarks.

PUBLICATIONS

Mitochondrial uncouplers impair human sperm motility without altering ATP content. *Biology of Reproduction,*

SKILLS

Python, Pytorch, SQL, AWS, JavaScript, C++, React, Next.js, PHP, OpenCV, Scikit-learn, Tableau, CometML,Three.js, D3.js, Plotly, Dash, Linux, HTML/CSS, GSAP, Framer Motion, Ultralytics