Bence Lukacsy

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Education

Stony Brook University — Stony Brook, NY
B.S. Computer Science & Mathematics — *Aug. 2023 – Dec. 2026*

- GPA: 4.0/4.0
- Honors College + Honors Computer Science

Experience

Managing Member — July 2025 – Present
Lukacsy-Bhowmik Trading — *New York, NY*

- Developed a sports market making system across prediction markets using Python, Redis, AWS EC2+VPC, FIX
- Designated market maker (DMM) with $300m+ notional volume and 4m+ trades, representing 2% peak daily exchange trading volume (Kalshi, Polymarket, Novig, etc.)
- Leading a team of four engineers to expand to smaller exchanges and maintain uptime/quoting requirements

Software Engineering Intern — June 2026 – Aug. 2026
Capital One — *Richmond, VA*

- Collaborated with four interns to modernize a legacy payment processing system using an event-driven Go and AWS Lambda pipeline that ingests payment files from S3
- Implemented validation for wire transactions and created the JSON request bodies for an internal downstream payment-initiation API
- Reduced client onboarding from 60 days to 24h, retaining hundreds of clients that net Capital One ∼$200k/year

Machine Learning Research Assistant — Sept. 2024 – Dec. 2025
McKinnon Rosati Laboratory — *Stony Brook, NY*

- Led a 4-person team to develop a supervised deep learning pipeline for automatic cell-type classification, achieving 93%+ accuracy, outperforming the SOTA
- Optimized JAX model training by leveraging CUDA and Nvidia A100 GPUs on the SeaWulf HPC cluster, scaling to ∼4 million cells (280GB), reducing training time from weeks to hours
- Presented research at the SBU Undergraduate Research Symposium, applying results to multiple scRNA-seq datasets, proving generalizability

Population Genetics Research Assistant — Sept. 2024 – Dec. 2025
True Laboratory — *Stony Brook, NY*

- Designed a multiprocessed, individual-based Monte Carlo simulation in Python and R to model asexual reproduction in fruit flies, working with graduate students in Taiwan
- Used the SeaWulf HPC cluster and Slurm job arrays to scale simulations to 96 CPUs and 100+ parameter sets
- Developed a high-performance simulation framework to explore parameters influencing asexual reproduction in very large population sizes, improving upon previous models by several orders of magnitude

Projects

Content Moderation Bot for Discord | *JavaScript, discord.js, MongoDB, PM2* — June 2022 – Present

- Created a Discord bot that moderates content for 150,000+ users across 500+ online communities
- Utilizing MongoDB to store state data such as on/off status for moderation features
- Self-hosting using Raspberry Pi 5 with PM2, achieving over 99% uptime

Colorectal Cancer Risk Assessment | *Python, Flask, XGBoost, TensorFlow* — Oct. 2022 – May 2023

- Trained a deep learning model using data from NCI's Cancer Data Access System
- Developed a full-stack web application and REST API with Python Flask and JavaScript
- Regeneron ISEF finalist and 1st place winner at RISEF

Skills

Languages: Python, Java, C/C++, JavaScript, HTML/CSS, MATLAB, Bash, R, Go
Machine Learning: JAX, Keras, TensorFlow, PyTorch, XGBoost, scikit-learn, NumPy, pandas
Technologies: Flask, Node.js, asyncio, Linux, Slurm, Nginx, AWS, EC2, PrivateLink, CUDA, MPI, PM2, Redis, FIX