Brian Reicher

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EDUCATION:

Northeastern University, Boston, MA – College of Science　　　　　　　　　　　　　　　　　　　*Expected May 2024*
Candidate for Bachelor of Science in Physics and Mathematics, Minor in Data Science | GPA: 3.9/4.0

ACHIEVEMENTS: *Dean's List, Lawrence Award, Northeastern University Science Scholars Program, University Dean's Scholarship*

RELEVANT COURSEWORK: *Advanced Data Engineering, Database Design, Machine Learning, Quantum Mechanics, Statistical Mechanics, Electrodynamics, Electronics, Classical Dynamics, Complex Analysis, Real Analysis, Linear Algebra, Probability and Statistics, Calculus 3, Differential Equations*

WORK EXPERIENCES:

Generate Product Development (breathing.ai): *Full-Stack Software Engineer*　　　　　　　　　　　　*August 2022-Present*
- Developing a robust biofeedback data workflow, focusing on integrating wearable-devices (Fitbit, watchOS) to web-application development
- Constructing a data-driven vital sign dashboard (React.js/Bootstrap/TypeScript) while incorporating & developing RESTful backend API endpoints for wearable device concurrency (Node.js/Express.js/Loopback4)
- Retrofitting & building a PostgreSQL database schema, which feeds biometrics into an AWS contained ML model for analytics
- Participating in Agile/Scrum practices, including weekly code reviews & walkthroughs with team to ensure quality during sprints

Harvard Medical School: *Software Engineer & Research Co-Op*　　　　　　　　　　　　　　　　*January 2022-Present*
- Engineering a webapp & subsequent PyPi package for image denoising, enhancement, and segmentation on industrial-sized volumetric datasets (Python, torch, JAX, MongoDB)
- Implementing revolutionary new GAN-based network architectures into webapp back-end, built through extensive research that led to a paper which I co-authored and submitted to International Symposium on Biomedical Imaging
- Developed an image edge-detection software library to improve microscope imaging efficiency
- Utilizing software methodologies to refactor, debug, review, and add features during multiple projects' development lifecycles
- Writing a pipeline to integrate 3rd-party APIs into data aggregation workflows & as well as scripts to assist in analyzing/preprocessing large databases & image stacks

ACADEMIC EXPERIENCES & PROJECTS:

Feiguin Computational Physics Laboratory: *Research Assistant*　　　　　　　　　　　　　　　*February 2022-Present*
- Researching condensed-matter physics with applications to quantum computing
- Building a deep-learning pipeline (Python, Tensorflow) to predict initial state configurations of Kondo Singlet qubit systems
- Accelerating quantum Monte Carlo simulations with GPUs (C/C++/CUDA)
- Examining entangled qubits via Bloch-Redfield analysis (Python, QuTip)

Northeastern University: *Algorithmic Trading Project*　　　　　　　　　　　　　　　　　　　　　　*Fall 2021*
- Built a financial trading pipeline (Python) which implements various machine learning algorithms to predict forward returns on stock investments
- Utilized data engineering principles to analyze and extract relevant features from 400,000+ insider trades from government or business officials
- Averaged approximately +1.6% ROI over a 21 day buy-sell period

Kalia Health XN Project: *Student Researcher*　　　　　　　　　　　　　　　　　　　　　　　　*Spring 2021*
- Designed a clinical study for a biotech company to measure biomarker levels for preeclampsia
- Participated in extensive research about preeclampsia and its symptoms, and learned about the inner workings of startup companies during bi-weekly meetings with Kalia Health's CEO

ACTIVITIES: Generate Product Development, Society of Physics Students & Mentorship Program, Mathematics Club, Intramural Basketball & Softball

COMMUNITY INVOLVEMENT:

Lorrimer Audubon Society & Nature Sanctuary: *Volunteer Camp Counselor*　　　　　　　　　*Summers 2017-2019*
- Taught children (ages 4-10) about nature and the environment by taking them on hikes and running classroom-style lessons about different animals

TECHNICAL SKILLS:

Languages: Python, TypeScript/JavaScript, SQL, Java/Jython, R, HTML/CSS, C/C++/CUDA, LaTeX, Markdown

Tools & Technologies: Agile/Scrum, Git/GitHub, Web Development, Linux/bash, MySQL, SQLite, PostgreSQL, MongoDB, Computing Clusters & GPUs, Parallel Computing, Apache Spark, Fiji, Google Cloud, VSCode, PyCharm, IntelliJ IDEA, WebStorm, DataGrip, DataSpell, RStudio, XAMPP

Libraries & Frameworks: Node.js, React.js, Express.js, Loopback4, Bootstrap, Flask, PyTorch, Tensorflow, JAX, SciKit-Learn, Dash, NumPy, SciPy, Pandas, Matplotlib, Pickle, PySpark, Plotly, PyMongo