Aryan Jha

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RELEVANT EXPERIENCE

Institute of Advanced Sciences   Dartmouth, MA
AI/ML Scientist and Engineer   Since March 2025
- Designed and trained CNNs in **TensorFlow** on brain MRI for pattern recognition to aid diagnostics and research.
- Developed **Neo4J** knowledge graph DB using **Cypher** to map protein-gene relationships.
- Created **MATLAB**-based computer vision tools for cell culture image analysis, cutting data collection time by 50% and reducing costs.
- Delivered AWS hosted, **MySQL**-backed lab inventory management microservices in-house (**Javascript**, **Python**), eliminating 100% of third-party service costs.

Data Unity Lab   Rochester, NY
Full Stack Lead   Sept 2022 - Jun 2023
- Implemented and maintained solutions for Relational Playground, an interactive web-based tool for relational algebra, using **React**, **TypeScript** and **FlaskAPI**.
- Managed relational algebra data manipulation, query processing and optimization using **SQL**.

American Express Company   Sunrise, FL
Cloud Engineer   Jun 2022 - Aug 2022
- Created and deployed distributed **GoLang** and **Python** applications for DB admin, halving query processing time and accelerating backup/restore operations by 2x.
- Automated operations across **OracleDB**, **PostgreSQL**, **Couchbase**, reducing manual error rate by 95% and improving system uptime to 99.9%.
- Streamlined microservices architecture using **Docker**, **Kubernetes**, **Terraform**, reduced overhead by 20%.
- Optimized **CRUD** operations and **SQL** queries, improving latency and transaction throughput by 10%.

Council Rock Enterprises   Rochester, NY
Full Stack Developer   Jul 2020 - Aug 2021
- Serviced **AWS Lambda** APIs and backends for embedded Linux-based IoT systems (**MongoDB**, **Java**).
- Developed frontend: **Qt (C++)** interfaces, **React/React-Native** Android and iOS apps (1000+ users, 4.5★ average).
- Produced real-time, scalable cloud-based data pipelines for agentic IoT solar inverters.
- Programmed, tested, and documented IoT networking firmware and solutions under tight deadlines.

NOTABLE RESEARCH PROJECT EXPERIENCE

Vulnerability History Project   Rochester, NY
Backend Developer   Sept 2019 - May 2020
- Built a highly scalable data ingestion pipeline for the Vulnerability History Project with **Ruby on Rails** and **JavaScript**, improving data accuracy and reducing overhead by 2x.

srcML Project   Rochester, NY
Software Engineer   May 2019 - Aug 2019
- Delivered srcSlice, a forward static code slicing tool using **C++**, **C**, and **CMake** - saving $2,400 on project costs.

EDUCATION

Rochester Institute of Technology (RIT)   Rochester, NY
Master of Science in Computer Science (AI & Data Science) / GPA: 3.63   Dec 2024
- Research focused on distributed AI systems, LSTM autoencoders, transformer models, and genetic algorithms for scalable anomaly detection. Engineered GPU optimization strategies using the **CUDA** framework in **C++**.

Bachelor of Science in Computer Science
- Minor: Applied Statistics, Immersion: Economics

RESEARCH & PUBLICATIONS

Fine-Grained Neuroevolution of Autoencoders for Efficient Multivariate Time Series Anomaly Detection   2025
- Introduced EXA-AE, a novel evolutionary RNN autoencoder framework (**PyTorch**, **TensorFlow**) for optimizing anomaly detection models.
- Reduced computational overhead while improving anomaly detection accuracy, enhancing scalability and efficiency.

Vulnerability History Dataset   2023
- Curated software vulnerability data, enabling the discovery of new security insights for robust development practices.

TECHNICAL SKILLS

- **Programming:** Golang, Python, TypeScript, Java, SQL, JavaScript, C++, Ruby
- **Frameworks:** React, Node.js, Flask, TensorFlow, PyTorch, Keras
- **Cloud & DevOps:** AWS (Lambda, DynamoDB, S3, ECS, SQS, Step Functions), Docker, Kubernetes, Terraform
- **Databases:** PostgreSQL, MySQL, MongoDB, OracleDB, Couchbase, Neo4j
- **Machine Learning:** Scikit-Learn, OpenCV, ONNX, CUDA, OpenVino