Ashir Rashid

Abu Dhabi | <u>Portfolio</u> | ar7789@nyu.edu | <u>LinkedIn</u> | <u>GitHub</u> | +971568911927

EDUCATION

New York University Abu Dhabi — Abu Dhabi, UAE
B.S. in Computer Science — Estimated Graduation: May 2026

Relevant Courses

Algorithmic Foundations of Data Science, Network Security, Foundations of ML, NLP, Algorithms, Data Structures, Data Management and Analysis, Operating Systems, Computer Networking, Probability and Statistics, Linear Algebra

Certifications

<u>AWS Certified Cloud Practitioner</u> — Jan 2025 - Jan 2028

Research

Co-author of a peer-reviewed paper under double-blind review (details available on acceptance).

WORK EXPERIENCE

GamaLearn — Abu Dhabi, UAE
Data Scientist — May 2025 - Present
- Designed scalable ELT pipelines using Airflow to process **100,000+** records, enabling robust statistical modeling.
- Developed automated analytical **dashboards** to monitor Key Performance Indicators (**KPIs**) in near real-time, reducing reporting latency from ~1 hour to minutes and improving decision-making efficiency.
- Developed and rigorously **backtested** probabilistic models, including EM-based models, Gaussian Mixture Models, and Bayesian estimators using variational inference and MCMC to evaluate robustness and distributional stability.
- Improved out-of-sample predictive accuracy by **25%** and reduced Expected Calibration Error (**ECE**) by **30%** through model refinement and distribution-aware parameter optimization.

eBrain Lab — Abu Dhabi, UAE
Vision Deep Learning Research Assistant — Aug 2025 - Present
- Produced **controlled synthetic datasets** across FLAIR, T1, and T2 MRI modalities to systematically evaluate invariance, robustness, and directional sensitivity, identifying structural weaknesses in existing loss formulations.
- Formulated and integrated **advanced loss functions** (e.g., <u>Generalized Surface Loss</u>, <u>Soft Dice Loss</u>) grounded in geometric and boundary-aware optimization principles, improving balanced accuracy by **~7%**.
- Engineered a lesion-level **evaluation framework** applying per-segment statistical metrics, enabling granular model diagnostics and rigorous hypothesis testing of segmentation performance.

Quantization Deep Learning Research Assistant — May 2023 - July 2025
- Formulated and solved constrained optimization problems to enhance energy and memory efficiency of **Deep Neural Networks** by **8.3%**, including **Large Language Models**, through implementing a state-of-the-art quantization framework, expanding on an existing open framework (HAQ).
- Optimized quantization configurations by applying **non-linear optimization** methods (**RL, Evolutionary Search, and DNAS**), improving model performance by **15%** and reducing hyperparameter search time by **43%**.
- Streamlined experiments with an **MLFlow**-based **MLOps** pipeline, reducing experiment iteration time by **12%**.

Gantom Lighting & Controls — California, US (Remote)
Full Stack Engineer — Jan 2022 - Jul 2023
- Built and deployed a scalable cloud-based web platform on **Google Cloud Platform** using Django and Firestore, managing **hundreds** of product entities with optimized data retrieval, increasing user engagement by **28%**.
- Applied database optimization and caching strategies to reduce latency by **22%**.

OPEN-SOURCE EXPERIENCE

IntelOwl
Open-source OSINT solution for gathering threat intelligence data — Jan 2023 - Present
- Fortified phishing defense capabilities by integrating the CheckPhish **API** with the dynamic React **front-end**.
- Rectified **system-level integration** and **CI/CD** bottlenecks, improving scalability and collaborative development.

PERSONAL PROJECTS

Source code for these projects is available on my GitHub
- <u>Gmail RAG</u> - **LangChain, LLMs**: End-to-end RAG pipeline for Gmail data, enabling semantic search and retrieval.
- <u>Better RAG</u> - **Elasticsearch, HPC**: Using Information Extraction techniques to improve RAG retrieval accuracy.
- <u>P2P File Sharing</u> - **Python, Sockets**: A file transfer app utilizing a peer-to-peer approach, similar to BitTorrent.

SKILLS

- Programming: Python, C++, C, SQL, PyTorch, TensorFlow, NumPy, Scikit-learn
- Modeling & Optimization: Bayesian Inference, MCMC, Variational Inference, EM, Gaussian Mixture Models, Reinforcement Learning, Evolutionary Search, Constrained Optimization
- Systems & Infrastructure: Airflow, MLflow, Docker, Kubernetes, AWS, GCP, PostgreSQL, Elasticsearch, HPC