Vikrant Bhati

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Objective

Graduate Computer Engineering student specializing in Machine Learning, with 6+ years of industry experience building scalable software and ML-driven systems. Seeking a Summer 2026 ML/AI Engineer internship to develop robust deep learning and reinforcement learning solutions for real-world, large-scale problems.

Education

Virginia Tech Blacksburg, VA

Master of Science – Computer Engineering, Machine Learning & Software *Aug 2024 – Expected Dec2026*

Related Coursework: Reinforcement Learning, Natural Language Processing, Deep Learning, Advanced Machine Learning, Computer Vision

Technical Skills

Machine Learning & AI: Deep Learning, Reinforcement Learning, Supervised and Unsupervised Learning, LLM Fine-Tuning, Retrieval-Augmented Generation (RAG), PyTorch, TensorFlow, scikit-learn
Programming Languages: Python, Java, C++, SQL
ML & Data Tools: Pandas, NumPy, Matplotlib, Seaborn, LangChain, FastAPI
Backend & Systems: REST APIs, Spring Boot, Microservices, Redis, MySQL
Cloud & Infrastructure: Google Cloud Platform (Pub/Sub, GCS, Cloud Functions), Kubernetes, Terraform, Jenkins

Experience

VIAVI Solutions Germantown, MD

Co-op Software Engineer *May2025 – Dec2025*

Tech Stack: C++, Python, PyTorch, Optuna, Reinforcement Learning, Pandas, PyTorch, Scikit-learn, NumPy, TCP/IP, UDP, CMIS, I2C, Bit Error Rate

- Designed and deployed a reinforcement learning pipeline in PyTorch to dynamically tune equalizer parameters (precursor, post-cursor, swing), achieving a three-order-of-magnitude improvement in bit error rate (1e-7 → 1e-10) for high-speed network testing workflows.
- Contributed to a C++ hardware control application, performing 32-to-64-bit migration and PLL/DRP configuration updates to support next-generation 800G optical modules.

Fiserv Inc. Noida, India

Specialist, Software Development Engineering *Apr2021 – Jul2024*

Tech Stack: Java, GCP (Pub/Sub, GCS, Cloud Functions, Cloud SQL), Redis, REST APIs, Spring Boot, Microservices, Kubernetes, Terraform, Pytest

- Designed and developed a serverless, event-driven system on Google Cloud using Python Cloud Functions to ingest Do-Not-Call datasets and expose updates via REST APIs improving compliance automation.
- Built a multi-menu inventory management system for Clover POS, enabling time-based menus and third-party integrations (DoorDash, UberEats), reducing merchant operational overhead.
- Led the migration from a monolithic architecture (10K+ endpoints) to cloud-native microservices, improving scalability, deployment velocity, and cost efficiency.

Professional, Software Development Engineering *Oct2017 – Mar2021*

Tech Stack: Java, JSP, Spring, Struts2, MySQL, Docker, OpenShift, RESTFul Services, JUnit, Fortify, Sonatype, WebInspect, Voltage (HPE Tool), Jenkins, IBM Rational Functional Tester (RFT), Git, Jira, Agile

- Engineered the Card-Free Cash feature, developing REST APIs and a web application that enables secure cardless financial transactions.
- Automated 600+ manual test cases using IBM Rational Functional Tester and Jenkins, reducing regression testing effort by 60% per sprint.

Projects

LLM Framework for Underspecified Optimization Tasks Sep2025 – In Progress

- Working on LLM-based reasoning framework for underspecified optimization problems, enabling structured inference under missing constraints using an OptMATH-trained base model.
- Developing a scalable data generation and supervised fine-tuning pipeline to improve logical reasoning and decision consistency in optimization tasks.

Cross-Task Benchmarking of CNN Architectures, Github Link Apr25 – May2025

- Benchmarked ResNet18-based CNN architectures with soft attention, hard attention, and Omni-Directional Convolution (ODConv) across ImageNet and Pascal VOC for classification and segmentation tasks.