Vikrant Bhati

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Education

Virginia Tech Blacksburg, VA
Master of Science – Computer Engineering, Machine Learning & Software *Aug2024 – Present*
Related Coursework: Natural Language Processing , Deep Learning, Advanced Machine Learning, Computer Vision

Dr. A.P.J. Abdul Kalam Technical University India
Bachelor of Technology - Electronics & Communication Engineering *Aug2013 – May2017*
Related Coursework: Data Structure, Cyber Security, Software Design using C++, Microprocessors

Technical Skills

Machine Learning & AI: Deep Learning, Reinforcement Learning, Supervised/Unsupervised Learning, Data Visualization, LLM Fine Tuning, Retrieval-Augmented Generation (RAG), PyTorch, Tensorflow, MCP, FastAPI, MLOps
Programming Languages: Python, Java, C++, SQL, Object Oriented Programming (OOP)
Tools & Frameworks: RestAPI, SpringBoot, Microservices, Terraform, MySQL, Redis, Github, Jira, Grafana
Libraries: Seaborn, Langchain, scikit-learn, pandas, NumPy, Matplotlib
Clouds & Ops: Google Cloud Platform (GCP), Microsoft Azure, Amazon Web Services (AWS), Jenkins, Kubernetes

Experience

VIAVI Solutions Germantown, MD
Co-op Software Engineer *May2025 – Present*
Tech Stack: C++, Python, PyTorch, Optuna, Reinforcement Learning, Pandas, Scikit-learn, NumPy, TCP/IP, UDP, CMIS, I2C, Bit Error Rate

- Developed a reinforcement learning system for dynamically tuning equalizer settings (precursor, post-cursor, and swing) to reduce inter-symbol interference and improve signal quality in high-speed network testing.
- Worked on a C++ application for high-speed test hardware, performing tasks such as 32→64-bit migration and PLL/DRP configuration updates, to enable next-generation 800G 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 framework on Google Cloud, where Cloud Functions were triggered to fetch Do-Not-Call data and update the database exposed through REST APIs for customer outreach.
- Developed a multi-menu inventory management for Clover POS system, enabling time-of-day menus and third-party integrations (DoorDash, UberEats, etc.), significantly reducing operational overhead and simplifying merchant inventory workflows.
- Implemented cloud-based microservices to transition from a monolithic application with over 10K endpoints to a distributed architecture, improving scalability, agility, 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.
- Developed the library to encrypt Personally Identifiable Information (PII) and Payment Card Industry (PCI) data using Voltage (HPE Tool).
- Automated 600+ manual test cases using the IBM Rational Function Tool, leading to a 60% per sprint reduction in the regression efforts.

Projects

LLM Framework for Underspecified Optimization Tasks Sep2025 – In Progress
Tech Stack: PyTorch, LLaMA-Factory, Large Language Model(LLM), Supervised Fine-Tuning (SFT), Hugging Face

- Implemented reasoning capabilities in an LLM pipeline to solve underspecified optimization problems using the OptMATH-trained base model, enabling logical inference on tasks with missing information.
- Developed a robust data generation pipeline to enable supervised fine-tuning of LLMs, enhancing their reasoning and problem-solving capabilities.

Cross-Task Benchmarking of CNN Architectures, Github Link Apr25 – May2025
Tech Stack: PyTorch, TensorFlow, CNN, scikit-learn, ImageNet, Pascal VOC

- Performed a comprehensive analysis of CNN architectures across multiple configurations for both image segmentation and classification tasks, highlighting the impact of the attention mechanisms into CNN models.
- Compared ResNet18-based CNN models across multiple configurations, including standard (no attention), soft attention with per-pixel and global feature maps, hard attention, and Omni-Directional Convolution (ODConv)—evaluated on ImageNet and Pascal VOC datasets for image classification and segmentation tasks.

Leadership Positions & Awards

- Worked as a Teaching Assistant for Applied Software Design at Virginia Tech, evaluating C++ work for 120 students and providing guidance on OOP, Software Design Patterns, unit testing, and code quality.
- Won three Clover Hackathon competitions held globally securing Judges Awards, 2nd place and 1st place respectively by implementing Communication Commerce using RCS, Smart inventory and Automatic Tip Management system.
- Received 15+ Living Proof awards for outstanding work and Employee of the Month on 3 occasions while working for Fiserv.
- Recognized with an Fiserv Success Story highlighting my professional journey to inspire fellow engineers.
- One of first five engineer or Fiserv's Clover India initiative, helping establish the foundation of the team that later expanded to 250+ engineers.
- Worked as a Barista at the Virginia Tech campus coffee shop, managing customer orders in a fast-paced environment and ensuring smooth day-to-day operations.