

Vaishnavi Venkateswaran

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EDUCATION

New York University (NYU) , Courant Institute of Mathematical Sciences

New York, NY

Master of Science in Computer Science, GPA: 3.834

January 2024 - May 2025

Coursework: Fundamental Algorithms, **Databases**, Operating Systems, Programming Languages, Networks, **Cloud Computing**, Machine Learning, Natural Language Processing, Deep Learning, **Realtime Big Data Analytics**, **Distributed Systems**, Finance

Graduate Assistant : Deep Learning under Professor **Yann Lecun**, **Data Structures** under Professor Max Sklar

National Institute of Technology - Trichy (NIT - Trichy)

Trichy, India

Bachelor of Technology, ICE, WES GPA: 3.72

June 2017 - May 2021

Coursework: Data Structures and Algorithms, Data Analytics, Neural Networks, Network Security, Database Management

TECHNICAL SKILLS

Languages: C, C++, Rust, Python, Java, Scala, JavaScript, R, Terraform, HTML/CSS, PL/ SQL, Perl, YAML;

Tools/Frameworks: Numpy, Pandas, PyTorch, TensorFlow, Keras, scikit-learn, Terraform, MongoDB, Cassandra, Neo4j, Redis, Django, Flask, BigQuery, MySQL, Unix/Linux, MapReduce, Hadoop, YARN, Kafka, Iceberg, NoSQL, HBase, Apache Spark

Others: GCP, Oracle Cloud, CUDA, Docker, Kubernetes, Git, RESTful APIs, OOPs, SQL and NoSQL databases

WORK EXPERIENCE

ORACLE , Member of Technical Staff (MTS),

Bengaluru, India

ORACLE CLOUD INFRASTRUCTURE - UI

July 2021 – December 2023

- Engineered comprehensive UI automation for over 15 features within **Oracle Cloud Infrastructure (OCI) UI** and **Oracle Autonomous Databases (ADBS)**. Contributed to **SQL query optimization** efforts ensuring seamless database performance.
- Reduced manual intervention by 15 hrs/week during biweekly on-call for OCI (**UI testing**) and documentation (**Confluence and Figma**) with **Java, Jenkins, Selenium, TestNG, PL/SQL, Perl** Scripts, **Grafana, Git** like **version control** using Oracle's internal ALM (Application Lifecycle Management).
- Validated functionality of **40+ RESTful APIs** between UI and control plane using **Postman and Curl**.
- Optimized **CI/CD Pipeline**: Leveraged **Docker**, Oracle **Kubernetes** Engine and **Terraform** for automated streamlined deployment, adhering to **Agile** practices reducing deployment time by 95%. Incorporated best practices for **distributed systems** to maintain **high availability, fault tolerance and scalability**.
- Spearheaded test migration initiatives for **Oracle MultiCloud Solutions**, integrating testing frameworks with **Azure, Google Cloud, and AWS** to achieve 100% compatibility across cloud environments with additional focus on **database replication technologies** for cross-cloud reliability.
- Spearheaded Voluntary **Product Accessibility** Testing for OCI UI, ensuring compliance with WCAG standards.

ORACLE MACHINE LEARNING - Security

January 2023 – December 2023

- Developed and implemented **30+ security regression** tests for **Oracle Machine Learning (OML)**, focusing on critical vulnerabilities like SQL injection and resource injection, achieving a 40% reduction in security risks.
- Ensured **grant-based security** coverage for OML models that improved access control by 45%.

FIDELITY INVESTMENTS, Software Development Intern, Chennai, India May 2020 – July 2020

- Created a client message prioritization tool for the Advisor Analytics website using **Natural Language Processing (NLP)** techniques, leveraging **NLTK** and **scikit-learn** to classify client messages into 5 categories.
- Built and simulated the web application using **React, JavaScript, Node.js, HTML, CSS, Express** (for backend integration), and **REST APIs**, reducing advisor workflow time by 30% and enhancing user experience.

PROJECTS

Colorizer (*Google Cloud Platform Project, Under the guidance of Dr. Hao Yu and Hsin Chung, NYU*)

- Redesigned and implemented the DeOldify NoGAN colorization model as a standalone application, leveraging **PyQT6, Numpy, Pandas, PyTorch, OpenCV, and FFmpeg**, increasing user accessibility and application usability by 30%.
- Performed **GPU analysis** of NoGAN based DeOldify model (**roofline graphs and FLOPs**) in GCP VMs across 10+ zones using **CUDA** disk images. Deployed the application in GCP using **Docker** and **Google Kubernetes Engine**.

Kaizen (*HooHacks , University of Virginia*)

- Collaborated with a team of 4 to transform lecture video links into concise notes leveraging **React, JavaScript, Node.js, MongoDB, and Azure OpenAI's transcript API**.
- Optimized API usage by 50% through efficient call management and **caching** mechanisms.

OS Nexus : Subsystems (*Under the supervision of Dr. Hubertus Franke, NYU*)

- Developed 4 key subsystems for an Operating Systems project using **C++**: a **Linker** for managing symbol resolution and executable generation; a **Scheduler** implementing process scheduling algorithms for CPU time allocation with **multithreading** support; an **I/O Scheduler** optimizing disk operations through **concurrent processing**; and a **Memory Management Unit** handling virtual memory and page replacement.