

Harsha Venkateshwara

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EDUCATION

University at Buffalo

Master of Science in Computer Science and Engineering (Artificial Intelligence & Machine Learning)

Aug 2025 – Jan 2027

Buffalo, New York

Visvesvaraya Technological University

Bachelor of Engineering in Mechanical Engineering

Jun 2018 – Jul 2022

WORK EXPERIENCE

Itron, Inc.

Technical Associate

Aug 2023 – Aug 2025

- Co-led multiple utility operations analytics and predictive modeling initiatives on large-scale operational data (70M+ records), delivering system-level supervision tools including forecasting models, risk classification, and standardized feature-ready datasets to support repeatable analytics workflows.
- Built and evaluated regression and classification models improving forecasting accuracy by 18% through structured feature engineering, validation, and tuning.
- Performed EDA and data-quality/risk diagnostics to uncover operational risk patterns and reduce noise, cutting false positives by 30% and improving reliability of model-driven decisions for engineering and operations.
- Documented model performance with statistical metrics and communicated insights to cross-functional stakeholders in clear, decision-focused summaries and walkthroughs, enabling faster and more confident operational actions.

Kyono Software Pvt. Ltd.

Machine Learning Engineer (Research & Systems)

Jun 2022 – Jul 2023

- Developed a value-model based RL algorithm inspired by VAPO that improves long-horizon credit assignment over GRPO, yielding higher token efficiency and more stable training dynamics.
- Implemented Expert Parallelism with overlapping compute/communication, yielding a 30% faster MoE forward pass and a 50% reduction in activation memory for SwiGLU layers.
- Built the Autoinstall pipeline to process raw codebases into runnable tasks for RL training, performing dependency resolution, package installation, and runnability checks within the existing sandbox system.

Bharat Electronics Limited

Data Science Intern – Air Force Defense Unit

Sep 2021 – Oct 2021

- Developed predictive maintenance models with Python and Pandas, improving fault detection accuracy by 15%.
- Composed technical reports and delivered findings to engineering and defense teams, improving adoption of data solutions.

PROJECTS

Electric Smart Grid Stabilizer with Deep Learning – Itron, Inc. hackathon

github.com/harsha-venkateshwara/smart-grid

- Built an end-to-end machine learning pipeline on large-scale power system telemetry (generation, consumption, reaction times), performing data normalization, feature engineering, and label construction to predict grid stability outcomes.
- Evaluated deep learning and baseline ML models for stability classification, analyzing performance and sensitivity to system parameters; identified instability drivers supporting operational risk mitigation and earning the Itron SPOT Award for business impact.

Identification of Cancer-Specific Genetic Signatures

github.com/harsha-venkateshwara/cancer-gene

- Analyzed high-dimensional gene expression data (20K+ genes, 5 cancer types) through scaling, feature construction, and supervised multi-class classification.
- Applied PCA, LDA, KMeans, and benchmarked classical ML models and a deep MLP to study class separability and validate predictive performance.

SKILLS

- Programming & Data:** Python, C++, NumPy, Pandas, Scikit-Learn, OpenCV, Linux, Git
- Frameworks:** PyTorch, JAX/Flax, TensorFlow, Ray, DeepSpeed, FSDP, Hugging Face, vLLM, TensorRT, Orbx, Grain
- GPU & Systems:** CUDA C/C++, Triton, NCCL, MPI, XLA, Nsight Systems/Compute, Kernel Fusion, Memory Optimization
- Cloud & Infra:** AWS, GCP, Azure, Docker, Kubernetes, CI/CD, Slurm, Ray Cluster, TensorBoard
- Engineering & Development:** Object-Oriented Design, Data Structures & Algorithms, Distributed Systems, Data Engineering (ETL), MLOps, Cloud-Native Architecture, Agile Methodologies