

Sathish Kumar Prabakaran

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EDUCATION

University of Colorado, Boulder, CO, USA

CGPA: 3.80

Master's Student in Data Science

August 2024 - May 2026

Bannari Amman Institute of Technology, Tamil Nadu, India

CGPA: 3.49

Bachelor of Technology in Information Technology

July 2018 - May 2022

SKILLS

Programming & Frameworks: Python, C/C++, MySQL, PyTorch, TensorFlow, ONNX, OpenCV, Scikit-learn

Technologies & Tools: Docker, Git, Jupyter, VS Code, Miniconda, Jira, Bitbucket, Confluence, GitHub

Domains & Strengths: Machine Learning, Deep Learning, Computer Vision, LLMs, Quick Learner, Leadership, Communication

WORK EXPERIENCE

MultiCoreWare Inc, San Jose, USA

Research Intern – AI & ML

September 2025 - Present

- Researching and implementing AI kernel optimizations tailored for specialized hardware architectures.
- Supporting runtime engine enhancements, including operator expansion and post-training quantization improvements.
- Benchmarking models and contributing to performance profiling and debugging workflows for embedded AI applications.

MultiCoreWare Inc, Chennai, India

Software Engineer

July 2022 - July 2024

- Reengineered models across various categories to enable support for particular runtime engines. Exported PyTorch and TensorFlow models to ONNX to enable smoother conversion while retaining 100% baseline accuracy.
- Implemented custom operations for unsupported layers and developed validation pipelines to ensure reliable deployment.
- Troubleshooted technical challenges and created comprehensive test cases to uphold software quality and performance.
- Analyzed performance bottlenecks and implemented optimized AI kernels tailored for hardware-specific ISAs, improving utilization by up to 90%.
- Achieved 100% functional and statement coverage for critical components.
- Implemented ScalePerChannel functionality in a custom deep neural network runtime engine to maintain accuracy post-quantization.

MultiCoreWare Inc, Chennai, India

Project Internship

October 2021 - June 2022

- Developed automated scripts for testing and validating a custom DNN runtime engine.
- Enhanced code maintainability and readability by modularizing and refactoring the codebase with thorough documentation.
- Extended frontend support in a custom DeepNeuralNetwork runtime engine by enabling compatibility with diverse operator versions, improving deployment flexibility.

ACHIEVEMENTS

Monarch of the Month, MultiCoreWare Inc

- Received recognition as Employee of the month for exceptional performance and contributions to a key project.

Winner, District Level World Skills competition

- Secured first position in the District Level World Skills competition, displaying exceptional skills in 3D Game Designing

ACADEMIC PROJECTS

ResuIntelGenAI – AI-powered resume matcher & cold email generator

- Built a full-stack Streamlit app using LangChain and Groq API to extract job skills, analyze resumes, and generate personalized cold emails with LLMs.
- Integrated skill fit scoring, resume improvement suggestions, and radar chart visualizations for career alignment insights.

Deep Learning Image Processing Web App

- Developed a web application using Flask that processes images with deep learning models for object detection, segmentation, and classification.
- Integrated **ResNet152_Weights**, **DeepLabV3_ResNet101**, and **Mask R-CNN (ResNet50-FPN v2)** for high-accuracy inference.
- Leveraged PyTorch for model execution and OpenCV for image preprocessing, providing real-time results with confidence scores.

Predictive Analysis of Toxic Releases

- Built forecasting models (e.g., SARIMAX, ARIMAX, XGBoost) to predict toxic chemical releases using EPA's Toxics Release Inventory (2014–2023).
- Automated data cleaning and standardization, improving efficiency in large-scale data analysis.
- Visualized trends to generate insights for environmental policy decisions.