DEVARAPALLI LAKSHMI SIVANI

Phone: +1 (814)280-6322 | Email: sivanidevarapalli26@gmail.com | Github: Sivanid26 | Linkedin: sivanidevarapalli

EDUCATION

The Pennsylvania State University, UP (Main Campus) — Pennsylvania, USA
M.S in Computer Science and Engineering - 4.0/4.0 — *August 2024 – May 2026*

Indian Institute of Technology, Hyderabad — Telangana, India
Bachelor of Technology in Electrical Engineering - 8.89/10 — *July 2018 – May 2022*

- Secured AIR 3368 in Joint Entrance Examination(Advanced) among 1.2 million candidates in General Category.

PROFESSIONAL EXPERIENCE

Microsystems Design Lab, Penn State — University Park, PA
Research Intern — *May 2025 – Present*

- Developed **ThermLeT**, a deep learning model for steady-state thermal prediction in 2.5D chiplet packages, reducing simulation time from minutes to **<15 ms** with **RMSE 3.16 °C**, **MAE 2.24 °C**.
- Automated generation of **6,221 ANSYS FEM layouts** by integrating power maps, material properties, and spatial embeddings into a scalable dataset.
- Deployed an end-to-end **PyTorch pipeline** with **multimodal** feature fusion, hyperparameter tuning cutting prediction error by **30%** over CNN baselines and benchmarked against ThermEDGe, HotSpot, achieving **5**× and **11**× speedups respectively.

Synopsys India Pvt. Ltd — Bangalore, India
RnD Engineer — *July 2022 – July 2024*

- Managed the Synopsys SV team in India, overseeing VCS feature development and code sanity, achieving a **40%** faster feature deployment with stable releases.
- Enhanced the VCS compiler by developing support for various constructs in SV language using **C/C++**. Worked in all compilation stages, from parsing to Runtime, resulting in a **15%** reduction in compilation time.
- Wrote regression unit test automation **Python** scripts that replaced manual testing in compiler workflow duties, decreasing manual effort by **80%** and shrinking the executed time for tests in half.
- Worked in handling quality issues, customer hotfix requests, and performance enhancements, including debugging large customer designs. Improved runtime performance by 5x, significantly enhancing existing features and reducing issue resolution time by **40%**.

Synchrony International Services — Hyderabad,India
Technical Intern — *Jan 2021 – Jun 2021*

- Conducted over 50 third-party security assessments and integrated 200+ Supplier Information Request Forms (SIRFs) into Keylight, enhancing supplier compliance and risk mitigation.
- Developed the Keylight Dev instance, aligning it with the production environment, resulting in a **30%** improvement in testing efficiency and enabling faster feature deployment.
- Optimized Keylight C# formulae to close data gaps and automated PCI workflows—boosting workflow accuracy by **25%** and cutting manual effort by **40%**.

PROJECTS

Deep Learning Classifier for Identifying Large Language Models (LLMs)

- Built a BERT classifier to distinguish **GPT-2**, **GPT-Neo**, **Falcon**, and **Facebook-OPT** outputs with **81%** accuracy.
- Created **35,028** text pairs from 8.7K prompts and fine-tuned the model with AdamW, dropout, and early stopping.

Distributed Parallel File System

- Designed a sequentially consistent parallel file system with concurrent **read/write** support, distributed across 8 servers, and managed by a metaserver for consistency and reliability.
- Implemented a Token Management system for **POSIX** consistency, an **LRU** cache reducing file server write-backs by **20%**, and **gRPC** communication achieving <10 ms latency for file operations.

Flight Delay Analysis Using BTS & Weather Data

- Unified **1998–2002** BTS flight logs with NOAA weather records, cleaning outliers and normalizing features.
- Constructed **XGBoost** and **SVM** models (grid search, 5-fold CV) achieving **90% accuracy** and uncovering a **12%** average delay rise post-9/11.

Evaluating Logical Reasoning in Large Language Models (LLMs)

- Designed the **Faulty_Q Dataset** to assess LLM reasoning, achieving **92%** accuracy and exposing a **17%** drop with misleading prompts in models like **GPT-4** and **Claude**.

TECHNICAL SKILLS

Languages: Python, C/C++/C#, MATLAB, SystemVerilog, Java, Javascript, HTML/CSS, GoLang, MySQL, Scheme
Tools: VCS (compiler tool), Keylight (GRC tool), basic Tableau(BI tool) knowledge, Perforce, Git, JIRA, Confluence
Relevant Courses: Vision & Language, Data Driven Design, Advanced Operating Systems, GPU programming
Libraries/Frameworks: Pandas, NumPy, Matplotlib, TensorFlow, PyTorch, React, Node.js