SHREYAS JAMMI

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EXPERIENCE

Data Science Intern - *John Deere* May 2024 - Present

- Engineering **20+ enterprise image classification models** to access impact of different planting conditions on trench depth estimate, presented data-driven insights to principle scientists and directors
- Implementing **IAM policy changes** for data labeling platform integration with **AWS S3 Storage** and designed ETL pipeline processing **1.2 TBs** of beta testing data into AWS S3 for data labeling efforts,
- Developed automated ETL pipelines transforming annotation metadata into Delta Live Tables, facilitating **hourly updates** for **real-time Tableau dashboards** and ML dataset generation
- Integrated **active learning** in labeling pipeline to prioritize improving uncertain data points from model inference to improve annotation efficiency and data quality in ML dataset generation

Data Science Intern - *Flexday Solutions LLC.* Feb 2022 - Aug 2022, May 2023 - Aug 2023

- Developed internal **python package** that leverages YAML based configuration to **automate** and **parallelize exploratory data analysis** and **model development** on **AZURE and AWS systems**
- Implemented an **enterprise ML system** utilizing **computer vision** for a national distributor that generates **real-time package production analytics** across facilities, resulting in **98.7 % Uptime and less than 150 ms Response Time**
- Designed high-performance **object detection computer vision** models leveraging **MobileViT** architecture and **quantized hardware**, achieving an **0.81 F1 score and 100ms average latency**
- Engineered an **customer service chatbot** utilizing **TF-IDF text classification**, streamlining user navigation to FAQs and support resources; engaged **200+ users** at the 2022 *Unleash America Conference & Expo*

Software Engineering Intern - *National Center of Supercomputing Applications* Aug 2022 - Present

- Developed application with **low-code GUI** that leveraged **High Performance Computing resources** that allowed biophysics researchers to prototype computer vision models on custom datasets; **implemented across 4 research labs**
- Optimized **400,000+ line** scientific simulation codebase through **OpenMPI parallelization** and systematic time and memory based profiling, achieving **21x performance boost**
- Implemented an **ETL pipeline** leveraging **HPC infrastructure** to generate ray-casting and isosurface 3D visualizations and movies from **300+ TB of scientific simulation data**
- Designed **Tableau dashboards** of **performance analytics** through systematic time and memory profiling of **Physics-Informed Neural Operators** models across diverse **AI accelerators**

EDUCATION

University of Illinois at Urbana-Champaign Expected Graduate: Dec. 2024

B.S. in Engineering Physics, Minor in Computer Science, Minor in Computational Sciences and Engineering

PROJECTS

MimicBot: Discord Chat-Bot, July 2024: Developed a discord app that parses through messages across discord server to train chatbot to mimic another user. Leveraged AlBERT model architecture, **model quantization, and model pruning** to decrease latency in text generation inference, achieving **200 ms latency** in inference time

Analysis of SciML in Simulations, July 2024: Solved for Tolman–Oppenheimer–Volkoff equations and the polytropic Equation of State of a Neutron Star using **Universal Differential Equations.** Analyzed changes in precision, accuracy, and inference in computations using deterministic and statistical time and memory based profiling

TECHNICAL SKILLS

Languages: Python, C++, FORTRAN, Julia, GO , Bash , SLURM, SQL, Rust

Relavant Frameworks: Apache Spark, Pytorch, Pandas, TVM, JAX, Sklearn, Tableau, Power BI