Saaketh Koundinya Gundavarapu

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EDUCATION

New York University   New York, NY
Master of Science in Computer Engineering, GPA: 3.97/4.0, Scholarship: $18000   *Aug 2022 – May 2024*

National Insitute of Technology, Warangal   Warangal, India
Bachelor of Technology CGPA: 8.38/10   *Aug 2015 – May 2019*

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, JavaScript, HTML, XML (frontend), CSS, Web Development, ABAP, CDS (equivalent - Java, SQL as backend).
Frameworks: React, React Native, Android, UI5, PyTorch, TensorFlow, High Performance Computing, NodeJS, Pandas, NumPy, Matplotlib, Tableau, Hadoop, MapReduce, Yarn, Spark, MongoDB. AWS, Azure. iOS.
Developer Tools: Git, Docker, SAP Cloud Platform, VS Code, Android Studio, PyCharm, IntelliJ, linux.
Machine Learning: Computer Vision, LLMs, Natural Language Processing, Classification, Regression, Neural Networks, Clustering, Deep Learning, CUDA.
Courses & Skills: Computer Architecture, Distributed Systems, Big Data, Machine Learning, Deep learning, High Performance Machine Learning, Data Structures, Algorithms, Real-time Embedded Systems

EXPERIENCE

Graduate Research Assistant   Aug 2022 – Present
New York University – DICE Lab, Deep Learning – Yann LeCun   *New York, NY*
- **Building LLMs for personalised recommendation**, to achieve very-long tailed user-specific product recommendation through Direct Preference Optimization and fine-tuning
- **Guided** students with their coursework, **organized** study groups and **mentored** students on lab experiments and final projects for the graduate-level Deep Learning course under Prof. Yann LeCun.

Software Development Engineer   July 2019 – July 2022
SAP Labs – Python, JavaScript, Data Services, SQL, XML   *Bangalore, India*
- **Led a team of 3** on end-to-end development of the Clinical Trials Supply Management UI application. – **Live in production systems** of 25 leading pharmaceutical companies, **annual savings $10M** – received Emerging Talent award (Demo).
- Built a UI application for tracking and managing purchase/sales order process flows from order to invoicing. – **actively deployed and utilized by Itochu, a fortune 100 company** –generated **$1M revenue**
- Presented a paper on coarse to fine hierarchical networks at SAP TechNxt 2021, **improving fine-grained classification accuracy** – received INR 30,000 for the **best paper award**.
- **Created unit tests and testing framework** for testing functionality and integration of agricultural contract management backend – improving overall code quality and **reducing** 30% **defects**.

PROJECTS

Image Similarity Search using AWS | *AWS S3, OpenCV, AWS Lambda, Docker, Python, API*   May 2024 - Present
- Developed a **serverless computing solution with AWS Lambda** to scale requests for image similarity search – **reducing the compute time by 50%**
- **Replaced SSIM with Deep Learning Model** to find similar images – **brought down compute time to linear - 70%**
- **Cached and stored Image embeddings** on distributed object storage using Amazon S3 – improved **scalability and reliability** for increasing image volumes.

Vision-KAN: Vision Transformers with KAN layers | *Pytorch, KAN, Open-source*   May 2024 - Present
- Created a **Python library, VisionKAN,** replacing MLP layers with KAN (Kolmogorov Arnold Networks) layers, achieving over **1000 ⬇ for package and 100 ★ on GitHub within 2 weeks.**
- Conducted experiments to evaluate **KANs as replacements for MLPs in vision** tasks, achieving **86.14% accuracy on ImageNet and 96.16% on CIFAR-100**.

Distributed Key-Value Store | *Micro services, ReactJS, ExpressJS, Flask, Horizontal Scaling*   March 2024 - May 2024
- **Developed** a Distributed Key-Value Store application with **backend, middleware and frontend** components, incorporating **LRU eviction policy, consistent hashing, and dynamic cache addition/remova**l.
- **Implemented quorum consensus** for read/write operations, data replication for durability, and integrated with a distributed tracing system for **performance analysis, ensuring high availability and reliability** of the system.

Enhancing Taxi Services Through Big Data Analytics | *PySpark, Tableau , StreamLit, SQLite*   Oct 2023 - Dec 2023
- **Created interactive dashboards** for customer behavior analysis, geospatial demand and supply visualization, and revenue analysis using Streamlit, and Tableau.
- **Conducted data processing** and analysis on large datasets of taxi trip data using SparkSQL and SQL, **contributing to insights** on improving taxi services efficiency and customer experience