Saaketh Koundinya Gundavarapu

+1 347-723-4376 | sg7729@nyu.edu | https://www.linkedin.com/in/saaketh-koundinya-24190073/ | website | github

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

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 o**ver 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**.

LLMs for Personalised Recommendation | *Pytorch, PEFT, LoRA, DPO, Llama* — Jan 2024 – Present

- Utilized conditional recursive classification with LLMs – **reduced the recommendation space from 10,000 to 100 items**.
- Currently engaged in **aligning LLMs for user-specific recommendations** within a reduced recommendation space, through Direct Preference Optimization.

LLM Unlearning | *Large Language Models (LLM), Machine Unlearning* — Oct 2023 – Dec 2023

- Implemented gradient ascent on PKU-SafeRLHF to **unlearn harmful LLM responses, aligning with ethical and safety standards** – achieved 92% mitigation of harmful responses.
- Fine-tuned LLM on copyrighted book and employed our unlearning method – achieved 91% dissimilarity from copyrighted content.

Zero shot object segmentation using Text prompts | *Pytorch, Python, Deep Learning* — Feb 2023 – Apr 2023

- **Experimented zero shot segmentation** using text prompts, by utilizing the Segment Anything model outputs with CLIP, on a subset (10k) of the COCO dataset. **Created a unified model** SLIP (SAM + CLIP) for fine-tuning – **Improved accuracy from 34% to 69%**