S KAWSHIK MANIKANTAN

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Technical Skills

Programming: Python, C++, C, JavaScript with ES7 standards, Java 11, MATLAB and OCTAVE
Frameworks/Stack: MERN, Flask, SpringBoot
Others: PyTorch, Keras, Tensorflow, Vue Library, MYSQL, OPENGL

Coursework

- Data Structures & Algos
- Statistical Methods in AI
- Operating System and Networks
- Design and Analysis of Software Systems
- Advanced NLP
- Computer Vision
- Advanced Graph Learning
- Digital Image Processing
- Information Retrieval and Extraction

Education

International Institute of Information Technology — Hyderabad
Bachelor of Technology + Master of Science by Research, CSE — *July 2019 — July 2024*
- GPA: 9.27/10.0

FIITJEE Jr. College — Hyderabad
Higher Secondary School - MPC — *April 2017 — May 2019*
- Score: 97.1%

Publications

Major Entity Identification: A Generalizable Alternative to Coreference Resolution
K Manikantan, S Toshniwal, M Tapaswi, V Gandhi — *EMNLP 2024*

Work Experience

Undergraduate Researcher — April 2021 - present
Center for Visual Information Technology — *IIIT Hyderabad*
- Guides: **Dr. Vineet Gandhi and Dr. Makarand Tapaswi**
- Researching on generalizable alternatives to coreference resolution and utilzing them to evaluate LLMs .
- Performed ablative studies on extending *Bringing Generalization to Deep Multi-View Pedestrian Detection*

Teaching Assistant — Monsoon 2023
AI - CSE Dept. — *IIIT Hyderabad*
- Subject: **Statistical Methods In AI (SMAI)**
- Created assignments, graded coursework, and conducted tutorials.

Research Intern — July 2022 - September 2022
StarSports — *Remote, India*
- Deployment of a human-free player tracking system at **Asia Cup 2022**
- Played a pivotal role in the ideation, feature enhancement and development of the pre-deployment pipeline.

Intern — August 2020-December 2020
Netisoft — *Remote, India*
- Development of an On-Production Curated Shopping Web-App using Agile Methodologies
- Worked extensively with React and played pivotal role in the design of an extensible database model.

Academic Projects

An Analysis of Natural Language Inference | *PyTorch, Lightning*   *github*
- Compared and evaluated **Bag-of-Words (BoW), LSTM, and Densely Interactive Inference Network (DIIN)** models for Natural Language Inference (NLI).

A Study of Tracking | *PyTorch, PyTorch Geometric*   *github*
- Recreated and modified *Tracking at 100FPS* and *Learning a Neural Solver for Multiple Object Tracking*. Efforts were made to extend the latter to Multi-View tracking applications.

Character Level Text Analysis | *PyTorch*, `nltk`   *github*
- Implemented Character-Level models- **CREPE (Convolutional Network)** and **CANINE (Attention Network)** to understand their performance on text classification tasks.

Wikipedia Retrieval System/ Search Engine | *Python*, `nltk`   *github*
- Developed an Information Retrieval System from scratch using a Wikipedia dump which was implemented based on Information Retrieval (IR) principles.

Multi-class Classification of Mental Health Disorders | *PyTorch, Keras*, `nltk`   *github*
- Classified mental health disorders(Reddit dataset), utilizing combination of models like CNN, Random Forest, SVM, XGBoost, and distilBERT.
- Developed a simple real-time text classification application.

SimpleRA DBMS | *C++*   *github*
- Built a simplified relational DBMS supporting basic operations on integer-only tables and efficient matrix operations (load, store, transpose).
- Utilizes two-phase on-disk merge sort, delayed writes for in-memory buffer management, and supports linear hash and B+ tree indexing.

Job Search Platform | *MERN stack*   *github*
- Implemented a **Multiple-User Interaction System (MERN stack)** for a job search platform.
- Developed functionalities for job seekers and recruiters.

Linux Mini Shell | *C*   *github*
- Implemented piping, redirection, and other generic BASH commands with support for background processes. Developed using modular principles and system calls.

Awards

- *Dean's List (Top 10-20% of the batch)* for Spring'21, Monsoon'22, Spring'22, Monsoon'23, and Spring'23

Extracurriculars

College Leadership Activites
IIIT Hyderabad
- Mentored incoming freshers, helping them acclimatise to the new college environment
- Participated in organizing the college techno-cultural fest - *Felicity*