ANSH KHANDELWAL

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EDUCATION

Carnegie Mellon University - School of Computer Science — Pittsburgh, PA
MS in Artificial Intelligence and Innovation (MSAII) — Aug 2023 - May 2025

International Institute of Information Technology — Hyderabad, India
B. Tech (Honors) in Electronics and Communication Engineering (ECE), CGPA – 8.77/10 — Jul 2019 – May 2023
Dean's List for Research & Academic Excellence, Teaching Assistant for Statistical Methods in AI & Embedded Systems

TECHNICAL SKILLS

Languages: C, C++, Python, Java, SQL, JavaScript, MATLAB, Bash, HTML, CSS
Tools/Frameworks: Git, PyTorch, Keras, Tensorflow, Scikit-Learn, Pandas, NumPy, MongoDB, Latex, Android Studio, Linux

SELECTED COURSEWORK

CS: Data Structures, Algorithms, Networks, Operating Systems, Processor Architecture, Computer Systems*, Coding Theory
ML: AI, ML, Image Processing, Natural Language Processing*, Graph Signal Processing, AI in Future Markets*
Mathematics: Probability and Random Processes, Linear Algebra, Real Analysis ***(*— ongoing at CMU)***

EXPERIENCE

Software Engineering Intern — July 2022 - Aug 2022
Siemens — *New Delhi, India*

- Designed a seq2seq LSTM-based encoder-decoder model to forecast time-series data extracted from analog blocks based on user inputs to the Siemens' Symphony mixed-signal platform.
- Coded an end-to-end pipeline of the model via C++ scripting and Python binding for code testing and production.

Software Engineering Intern — May 2022 - June 2022
Samsung — *Bangalore, India*

- Built a frame logger and delay-detecting tool by coding APIs in C for logging camera system parameters like CPU load, data transfer delay, and frame rate.
- Coded and delivered an interactive graph-based analysis pipeline using Python and a dash app to detect faulty/lagging camera systems due to high processing overhead.

Undergraduate Research Assistant — Sept 2020 - May 2023
Smart City Research Centre, IIIT Hyderabad — *Hyderabad, India*

- Engineered a smart water meter product: an economical solution to digitize analog water meters. Designed a modified random forest-based digit detection algorithm to get an accuracy of 97.69%. Work led to a *publication*[1] & a patent filed.
- Implemented Resnet-18 model combined with post-processing approaches for digit detection to get the accuracy of 99.4%. Designed a pipeline to estimate non-revenue water using network analysis. Work led to a *publication*[2].

Independent Research Assistant — Dec 2021 - Dec 2022
Precog, IIIT Hyderabad — in collaboration with Infosys — *Hyderabad, India*

- Developed a synthetic data generation and anonymisation pipeline to extend Infosys' iEDPS product using ML, synthetic data vault, and generative adversarial networks.
- Coded graph-based traversing algorithms for data discovery and disposal from multi-table data sources.

PROJECTS

Policy Park — *Python, PyTorch, NLP, Privacy Policies* — Deployed Hugging Face models:

- Developed and deployed a suite of machine learning tools to address the challenges of lengthy and complex privacy policies. The tools include a Jurassic-1 LM-based question-and-answer chatbot, a BERT-based FTC paragraph extractor for guideline identification, and a T5-based summarizer for concise policy summaries.

Linux Shell — *C, Command Interpreter*

- Built a bash-like command interpreter, written in C, with support for built-in/system commands, directory-specific prompt, input/output redirection, piping, signal handling, and process management.

Cache Simulator — *C, LRU Replacement Policy*

- Designed and coded a cache simulator in C to simulate cache memory behaviour with arbitrary size and associativity, given a series of memory operations (loads and stores).

IIITH OLX — *MongoDB, Express, React, Node*

- Built an e-commerce website for college students to buy/sell products and write reviews. Implemented features to edit posts/comments and support for searching the database using fuzzy string matching.