Palti Ramyasri

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Education

Indian Institute of Technology (IIT) Bombay 2019 - 2023
B.Tech *in Computer Science and Engineering* *GPA: 8.62*
Honors *in Computer Science (ML & NLP)* *GPA: 8.75*

Telangana State Board of Intermediate Education 2017 - 2019
Class XI & ***XII*** *Score: 98.4%*

Professional Summary

Computer Science graduate from **IIT Bombay** with a passion for AI/ML and solving real-world challenges

Growing up with a deep respect for analytical thinking and a drive to understand ideas clearly, I developed a passion for approaching problems with clarity and creativity. This approach helped me grasp complex mathematical concepts and secure a rank of 199 out of 1 million students in the IIT JEE Advanced examination

Bachelor Thesis work included a **Meta-Learning Analysis** for evaluating the **performance of Neural Networks vs. Boosted Trees on Tabular Data** and implementing **Parset library on GPU**

Contributed to firm's NLP initiatives at **Goldman Sachs**, by automating alert-resolution workflows, earning a pre-placement offer and internal recognition for reducing operational costs. Over **2 years of experience as a Software Engineer** working on distributed data pipelines and the on-prem ML execution platform. Worked on Spark batch/stream processing for distributed data solutions(HBase, Hive, HDFS, Hazelcast) and alert processing for anomaly detection models

Experience

Goldman Sachs
July '23 - Present

Software Engineer

- Scaled **Spark–Kafka** pipelines to support **1.5×** data volume, ensuring reliability and throughput of the on-prem ML execution platform for batch and anomaly detection models
- Re-architected multi-cluster **Hazelcast Data Browser and Management Center** achieving **60%** lower query latency
- Optimized real-time data querying on **SpringBoot** API, improving data transformations and concurrency management
- Developed an Event Monitoring system with Spark streaming flows providing real-time metric monitoring for alerts, handling a throughput of **500K events/second**

Goldman Sachs
May '22 - Jul '22

Machine Learning Internship

- Automated the generation of **Alert Resolution Workflows** by modeling runbook-to-workflow transformation as a **T5-based** sequence-to-sequence task
- Built workflow language parser with multi-branch flows, references to earlier steps for structured training and inference
- Improved model robustness to diverse runbook styles by incorporating **unsupervised denoising** and **masked language modeling** into training
- Expanded the training dataset from **3k to 30k+** samples by synthesizing runbook variants through controlled step recombination to improve generalization across workflow patterns

Teaching Assistant
Feb'23

Prof. Shivaram Kalyanakrishnan, IIT Bombay

- Mentored students and working professionals from diverse engineering backgrounds in the **Mathematical Foundations of AI and ML** course
- Designed assignments and assisted in labs on Feed Forward Neural Networks and path finding algorithms

Machine Learning Projects

Deep Learning For Tabular Data
Autumn '22

Guide: Prof. Ganesh Ramakrishnan | Bachelor Thesis Project

- Collaborated with **Abacus.AI** to investigate when **Neural Networks outperform Gradient-Boosted Trees**
- Contributed to analyzing **300+ meta-features** to study how dataset characteristics influence model performance
- Evaluated neural models (e.g., TabNet) and tree-based models (e.g., XGBoost) across **200 OpenML tabular datasets** and identified patterns linking feature-space irregularities to algorithm behavior

Pop-Lyric Generation
Autumn '22

Guide : Prof. Pushpak Bhattacharya | Natural Language Processing

- Built a **sentiment-conditioned LSTM lyric generator** by injecting sentiment embeddings into the recurrent hidden state to guide tone and stylistic patterns
- Designed the conditioning mechanism to incorporate sentiment vectors during decoding, enabling controllable lyric generation from user-specified prompts
- Evaluated lyric quality through line-length variability and repetition frequency relative to ground-truth lyrics

Image Caption Validation | Deep Learning
Spring '22

- Built a multimodal consistency classifier combining **CNN**-based visual features with **LSTM**-based caption encodings to score image–caption alignment
- Constructed a labeled dataset of **∼22.5k image–caption pairs derived from MS-COCO**, achieving **∼86%** accuracy with balanced precision–recall performance
- Evaluated model performance using ROC curves, FAR/FRR analysis, and Equal Error Rate(EER) to determine the optimal decision threshold for consistency detection

Question Answering System | Natural Language Processing
Spring '22

- Built a factoid QA model using a **BERT** encoder and a **BiLSTM** span predictor for start–end answer extraction
- Achieved a **91% F1 score** on the SQuAD validation set using dual classifiers for span boundary prediction

Document Classification and Representation Analysis | Web Search and Mining
Autumn '22

- Implemented Binary and Count Bag-of-Words (**B-BoW, C-BoW**) representations for the 20 Newsgroups dataset (∼18k documents across 20 categories)
- Trained and tuned **Multinomial and Poisson Naive Bayes classifiers**, achieving **82% and 74% accuracy** respectively across BoW variants and smoothing parameter settings

Systems Projects

Parset and its implementation on GPU
Spring '23

Guide : Prof. Rushikesh K.Joshi | Bachelor's Thesis Project

- Designed and implemented a **CUDA** C++ template-based library to adapt the **Parset** construct for **GPU architectures**, abstracting distributed system complexity and enabling transparent **SPMD/MPMD** parallelism
- Evaluated kernel performance for **Memory-intensive**(Merge Sort) vs **Compute-intensive**(Matrix Multiplication)
- Leveraged findings on **Host-Device communication** latency to inform the design of Parset construct execution

P2P Cryptocurrency Network
Spring '23

Guide : Prof. Vinay Riberio | Blockchain Technology

- Built a discrete-event simulator for a **multi-peer blockchain network**, implementing event queues, network-latency modeling, transaction generation, and PoW mining with exponential inter-arrival times
- Simulated **Selfish and Stubborn Mining attacks** with adversary-controlled private chains, evaluating attacker–honest miner block ratios and comparing outcomes against theoretical benchmarks

Compiler Design | Implementation of Programming Languages Spring '22

- Developed a Compiler from scratch for C-like languages using lex and yacc to generate **TAC** and **RTL** statements
- Implemented major Compiler phases including scanning, parsing, lexical analysis, and register allocation algorithms

Bash-like Shell with Multithreading | Operating Systems Spring '22

- Enhanced **xv6** operating system by adding system calls, featuring memory and process management techniques
- Developed **bash-like shell** supporting serial, parallel, foreground, and background execution using system calls

Skills

Programming: C/C++, Python, Java, Scala, CUDA, JavaScript/TypeScript

Frameworks and Libraries: TensorFlow, PyTorch, Hugging Face, OpenCV, Pandas, Matplotlib, Spring Boot, NodeJS

Databases & Software: HBase, HDFS, Hive, Hazelcast, MongoDB, Django, Angular, React, MATLAB

Coursework Information

Machine Learning and Natural Language Processing: Information Retrieval & Mining for HyperText & the Web, Speech, Natural Language Processing & the Web, Deep Learning for Natural Language Processing, Foundations of Intelligent and Learning Agents, Artificial Intelligence and Machine Learning, Data Analysis and Interpretation

Computer Science: Virtualization and Cloud Computing, Introduction to Blockchains, Cryptocurrencies and Smart Contracts, Database and Information Systems, Operating Systems, Computer Architecture, Computer Networks, Compilers, Software Systems, Automata Theory, Data Structures and Algorithms, Design and Analysis of Algorithms

Math: Linear Algebra, Calculus, Discrete Structures, Numerical Analysis, Mathematical Methods in Engineering

Scholastic Achievements

- Achieved an **All India Rank of 199** in the **JEE Advanced** examination among 1 million candidates 2019
- Secured an **All India Rank of 353** in the **JEE Mains** examination out of 1.4 million candidates 2019
- Recipient of the prestigious **Kishore Vaigyanik Protsahan Yojana Fellowship**, Government of India 2018
- Qualified for the **Indian National Chemistry Olympiad (INChO)** by scoring in the **top 1% nationally** in the **NSEC** conducted by IAPT 2018

Extracurricular Activities

- **Department Academic Mentor** — *DAMP CSE, IIT Bombay* May '22 - May'23
  Mentored six sophomore students for a smooth transition into the department
  Motivated students in the Academic Rehabilitation Program to perform academically well
- **Web Team Lead** — *Undergraduate Academic Council, IIT Bombay* May'21 - May'22
  Developed student support dashboards and workshop portals for institute academic cells
- **Cadet and Parade Pilot** — *NCC Maharashtra Regiment, IIT Bombay* Aug'19 - Apr'20
  Completed one year of intensive NCC training, including participation in the Annual Training Camp
- Provided mentorship and career guidance to school students during the Career Counselling Campaign 2019
- Built an app-controlled Bluetooth robot for obstacle navigation as part of the Electronics and Robotics Club 2019

Links

- **Bachelor Thesis**: Meta-Learning Analysis for evaluating the performance of Neural Networks vs. Boosted Trees on Tabular Data - *https://ramyapalti.github.io/assets/documents/BTP-1_Ramyasri_Palti.pdf*
- **Bachelor Thesis**: Study of the implementation of Parsets on GPUs - *https://ramyapalti.github.io/assets/documents/BTP_II_Report_Ramyasri.pdf*
- **Website**: *https://ramyapalti.github.io*
- **LinkedIn**: *https://www.linkedin.com/in/ramyasri-palti-59aba5192*