

Somu Prajapati

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Senior Undergraduate · Majors in Computer Science & Engineering · Minors in Industrial & Management Engineering

EDUCATION

Year	Qualification	Institute	Performance
2018-Present	B.Tech, CSE (Majors), IME (Minors)	Indian Institute of Technology, Kanpur	8/10
2016-2017	CBSE, Grade XII	Prince Academy, Sikar, Rajasthan	91.4%
2014-2015	CBSE, Grade X	Kendriya Vidyalaya, Leh-Ladakh, J&K	10/10

WORK EXPERIENCE

T0uch.io, New York, USA

May'21 - Aug'21

AI Lead Engineer

Responsibilities

- Led the AI team consisting of 3 junior interns. Collaborated with product, app and UI team to bring out **4 releases** of the product in the course of 3 months.
- Responsible for designing, developing and deploying AI Solutions to solve the core problem of financial independence.
- Designed and built the API backend (AI and Product) from scratch and deployed it on **Google Cloud Platform**.

Project 1: Feature Engineering of User Competencies

- Built a scraper to gather LinkedIn data from user profiles and used GICS for hierarchical classification of user competencies.
- Generated a Job-to-GICS dataset to benchmark various sentence transformers, finally selected **RoBERTa** to generate the user competencies and GICS structure embeddings.
- Developed an **autoencoder** to compress the user embeddings, trained it to **99.3% accuracy** on test embeddings and deployed it into the Feature Engineering pipeline.

Project 2: Recommender System

- Built a recommender system that recommends financial news and podcasts to the users based on their competencies.
- Improved the curation via a recommender system based on the **DDPG algorithm**. Used Experience Replay and Noisy Rewards for better exploration.
- Used **collaborative filtering** in the social graph to add exploratory noise and top-content across user feeds.
- Built a data agnostic API layer for the content team to manually curate content for the user.

Mobileum, Bangalore

May'21 - Aug'21

ML Engineering Intern

Library Agnostic Inference Server

- Did R&D to deploy a large ML pipeline for spam classification (**around 8GB** in size) in the best way possible. Adopted API Server architecture, developed a POC using flask and gunicorn, and deployed it on the testing cluster.
- Developed a microservice that runs in a separate JVM to identify and store invalid URLs in a Redis cache to minimize the data entering the inference pipeline.
- Built an API framework that can deploy ANY inference pipeline without extra code overhead.
- Optimized the framework using multi-threading and record batching for GPU based deployments to decrease the average inference time from **2.9s to 242ms** (benchmarked on a single core).
- Deployed **3 ML pipelines** (written in different libraries) using the framework on the testing cluster.
- Added benchmark test cases in **locust** to fine-tune various internal parameters for load balancing and performance optimization.

MeTripping Technologies, Bangalore

Apr'20 - Jun'20

Software and Data Science Intern

Project 1: VideoBlog Microsite

- Built a social platform for video blogging and streaming using Vimeo API. Indexed videos on user defined tags and location tags for a faster search response.

Project 2: Activity to Attraction mapping using NLP

- Pre-processed and mapped two datasets with no common join column using fuzzy-matching and StanfordNLP, multiprocessing wrappers, and location metadata.

ACHIEVEMENTS

- 2019 **Silver medalist**, Dev Hackathon, 7th Inter IIT Tech Meet
- 2018 **All India Rank 949**, JEE Advance, 200,000 candidates
- 2018 **All India Rank 3796**, JEE Main, 1.2 million candidates

PUBLICATIONS

SwaGrader: The Peer-Grading Tool 🌐 link

Jan'20

Somu Prajapati, Ayushi Gupta et al.

- One of the 6 accepted papers in the demo track of ACM India Joint International Conference on Data Science & Management of Data, 7th ACM IKDD CoDS and 25th COMAD.

PROJECTS

COVID19-CT: COVID-19 Contact Tracer

Mar'20 - Apr'20

JHU COVID19 Design Challenge

🌐 somupra/COVID19-CT

- Participated in Johns Hopkins Design Challenge and SAMAD-HAN challenge by GOI with Prof. Swaprava Nath.
- Devised a Contact Tracing algorithm & did epidemiological analysis using openflow dataset from sekilabs, Japan.
- Carried the idea forward with **SIIC IIT Kanpur**, Campus Haat CORONA 360 app.

SRLMS: Smart Road Leasing & Maintenance System

Dec'20

7th Inter-IIT Tech Meet

🌐 somupra/Inter-IIT-Hackathon

- Developed an app with modular REST backend that exposes various APIs to crowdsource information for Road lease & maintenance. Dockerized the backend for speed and scalability.
- Won **silver medal** among all 22 participating IITs.

Operating Systems

Course Project

Prof. Debadatta Mishra, IIT Kanpur

🌐 somupra/CS330-OS

- Implemented various syscalls, message queue, multi-level paging table, and a **debugger** in gemOS, which is an educational OS.

Compiler Design

Course Project

Prof. Amey Karkare, IIT Kanpur

🌐 somupra/CS335-G9

- Implemented a toy **C-compiler** using python PLY with basic and advanced C features such as dynamic memory support, optimized expression evaluation, and better register allocation.

RELEVANT COURSES

*ONGOING **COURSERA

Under Graduate Project **A***

Software Development and DevOps **A**

Data Structures and Algorithms

Parallel Computing

Probability Theory

Industrial Applications of IoT*

Cybersecurity of critical infrastructure*

Statistics for Business Analytics*

Intro to ML **A**

Principles of DBMS **A**

Advanced Algorithms

Operating Systems

Compiler Design

Marketing Research

deeplearning.ai**

Game Theory*

SKILLS

Programming: Python, C++, C, MPICH (Parallel Computing)

Machine Learning: Pytorch, Keras, Scikit-Learn

Web/App: Django (REST), Flask, Angular, Flutter, Gunicorn

DBMS: MySQL, PostgreSQL, MongoDB, SQLite, Redis, Firestore

Misc : Git, Dockers, Nginx, L^AT_EX, Bash Scripting

POSITIONS OF RESPONSIBILITY

Company Coordinator

Aug'19 - Feb'20

Students' Placement Office, IIT Kanpur

Project Mentor & Secretary

Jan'20 - Mar'20

Association for Computing Activities, CSE Dept. IIT Kanpur

Secretary

Apr'19 - Mar'20

Programming Club, IIT Kanpur