

Career Objective: I envision myself pursuing a career in research and development, with a focus on developing AI-driven solutions to real-world problems. Whether it is enhancing healthcare diagnostics, improving natural language understanding systems, or advancing autonomous technologies, I am eager to contribute to the cutting-edge innovations that will shape our future.

Education:

BS Computer Science

September 2024 - May 2027

Institute: University of Wisconsin-Madison

Btech Computer Science and Engineering (First year)

July 2023 - June 2024

Institute: International Institute of Information Technology - Hyderabad

Work Experience

Research Intern, Sustainability Lab

Indian Institute of Technology Gandhinagar

(May 2024 - July 2024)

- Worked under Prof. Nipun Batra on advanced time series forecasting methods
- Conducted comparative analysis of various probabilistic models, informers, and transformer models using PM2.5 datasets
- Designed and implemented advanced neural network architectures, including LSTM RNNs, LSTM Encoder-Decoders, MLPs with varied positional encodings, and innovative MLPs utilizing micro-sequencing for time series tokenization
- Explored univariate and multivariate time series channels to enhance forecasting accuracy
- Collaborated on challenging state-of-the-art LLM-based zero-shot time series forecasters like TimeLLM and LLTime
- Gained hands-on experience in cutting-edge AI/ML techniques for environmental sustainability applications

Projects

NLP Illness prediction model

- Problem statement: villages and rural area doctors do not have knowledge about the latest findings connecting common symptoms to serious diseases. Terminal illnesses share some symptoms with non-terminal illnesses and misdiagnosis/late diagnosis leads to loss of life.
- Idea: offline machine learning model trained on millions of research papers. Updates text corpus whenever it gets online.
- Implemented cosine similarity module on large medical datasets, found diseases based on symptoms entered.
- Made in python, using word2vec embeddings.

IoT Irrigation system

- Dual functionality: Turn on/off by user app frontend via cloud iot and automated control based on values of moisture sensor near plant soil
- Used python, javascript for scripting on Bolt IoT cloud platform. Bolt IoT api used for interfacing board.

Hurricane Help platform (ByteHacks : 48 hours hackathon) : 2nd place

- Blockchain implementation from scratch to store patient medical data. Ensures privacy and security. Used Node.js, css, scss and html
- Linear regression model with gradient descent optimization predicting casualties due to hurricanes in an area, given its population, people density, hurricane lat/long, max wind speed and place's lat/long. Generated my own barebones dataset based on Hurricane Katrina's available news and sparse dataset combinations.
- Optimized accuracy to 89 percent.
- Collaborated with the rest of the team on frontend and a donation form. Team composition was international, 3 members from the US.

Descriptive Answer Correction Model (Intel AI - THON)

- Created a machine learning and OCR powered answer checker
- Teacher enters the answer with marks distribution. Input of answers of students in photo format.
- Implemented OCR using computer vision, NLP cosine similarity indices to check the amount of similarity to correct answer
- Customized grading algorithm, trained on feedback data by teachers.

RXChange : Community donation application

- A community based Android app for resource sharing and waste reduction, using Java in Android Studio and Firebase data management.
- An OCR powered expiry date detection feature using Google's on device image-to-text services to validate usability of shared items
- Collaborated in a team across different time zones to design and integrate various app components including user authentication, item listing and request management.

KonnectNXT Job Recruitment System (Megathon : 24 hours hackathon)

- Built a project for company KonnectNXT (CIE incubated company in IITH)
- Designed a linear regression model combined with nlp to evaluate the level required from each skill from a set of soft skills based on the tone and semantics of the job description required
- Designed a custom test set to be given by each job applicant, that has answers that correspond to a certain level vector corresponding to the same set of soft skills. Question wise vector generated.
- Recruitment companies can give weights to questions that they deem important or not for their job. The weights are then multiplied to the candidates' individual question wise vectors and a weighted average is found. If it matches with or is in the desired range of the vector generated from the job description, then the candidate has the necessary soft skills required.

Smart Chair Mobile app frontend

- Based on a resident professor's design for a smart chair seat pad, interfaced 8 sensors with an Arduino NANO BLE and sent data to a local mongoDB server
- Built a logical mobile app frontend for displaying the most recent sensor values using Flutter/Dart
- Sent data via HTTP, formatted json responses from and to the mongodb server, used multithreading in python via flask.

IoT : Automated Home Security

- With limited sensor arrays and time, designed an MQTT and REST based IoT model dealing with automatic door and window locking, intruder detection and package delivery verification system.
- Sensors and actuators provided : PIR, Ultrasonic and servo motors
- Used ThingSpeak MQTT broker and REST Apis with a custom web dashboard.

Skills and Expertise

- **Programming Languages:** C, C++, Python, JavaScript (Vanilla, Next.js, Node.js, Express.js), Java
- **Frameworks & Libraries:** React, Flask, TensorFlow, PyTorch
- **Databases and Related Languages:** MongoDB, MySQL, PostgreSQL
- **Tools & Technologies:** Git, Android Studio, Firebase, IoT platforms
- **Machine Learning:** Time Series Forecasting, Natural Language Processing, Computer Vision

Coursework:

IIT-Hyderabad

- Computer programming, Data Structures and Algorithms : developed programming efficiency and expertise in C/C++
- Introduction to Software Systems : Familiarity with Python, Bash scripting, Version Control systems and various JS frameworks, Query Languages (MySQL, PostgreSQL)
- Digital Systems and Microcontrollers, Computer System Organization : Exposure to circuit design, processor design, system architecture, assembly programming
- Real Analysis, Discrete Structures, Linear Algebra : proof writing, abstract algebra and linear algebra

Independent

- Introduction to Artificial Intelligence (IIT Delhi, NPTEL) : Exposure to history and progression of artificial intelligent systems and the mathematics behind
- Java 17 MasterClass (Udemy) : Basic to Intermediate Java JDK 17 exposure

Extra-Curricular Activities

- Part of the technical teams of following clubs at IITH - July 2023 – Feb- 2024
 - Entrepreneurship club : Tech Team : ecell.iit.ac.in
 - Electronics and Robotics club
 - Open Source Development Group : osdg.iit.ac.in/
 - Design club, Decore : Design Team
- Part of two music bands in college called Segmentation Fault and Loded Dipers
- Volunteer Experience:
 - Donated Rs.12,000 to Prime Minister Relief Fund May 2020, the amount was collected by selling tickets of her live solo concert. Received appreciation letter from Under secretary of PM Relief Fund Office

Honours and Awards:

Award	Competition	Name of Presenting Organization	Issued Date
Certificate of Excellence	Piano (Theory and Practical Performance)	St Xavier's Institute of Performing Arts,Ahmedabad	1st Sept-2019
State First	Music Instrumental - under 14	Government of Gujarat – department of culture and	Monday, September 17, 2018
Runner Up	17th Annual Inter School Music Award	The School Post in collaboration with Times-communication	Saturday, August 13, 2016
Winner	18th Annual Inter School Music Award	The School Post in collaboration with Times-communication	Sunday, August 14, 2016
Outstanding -Best Reader	Reading Skill	Delhi Public School Gandhinagar	2019-2020
Certificate of High Distinction	(Australian National Chemistry Quiz) 2019	raCI(Royal Australian Chemical Institute	Monday, January 13, 2020
Certificate Of Merit (Out Standing Performance)	National Astronomy Challenge 2017	Stem Research & Innovation, New Delhi	Tuesday, June 6, 2017
Certificate Of Merit and The Esteemed Title of Asset Talent Scholar	Asset Talent Scholar Talent Search 2016-17	Asset	Thursday, January 19, 2017