Mihir Pamnani

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EDUCATION

University of Illinois, Urbana-Champaign — **Incoming Graduate Student**
Master's in Computer Science — Expected Graduation: May 2025

University of Mumbai (VESIT), India — **2019 - 2023**
Secured a Bachelor of Engineering in Computer Engineering. **(CGPA: 9.83/10)**
Relevant Coursework: Data Warehousing and Mining, Engineering Mathematics, Machine Learning, Distributed Computing, Big Data Analytics, Natural Language Processing, Analysis of Algorithms, Artificial Intelligence, Database Management System

PROFESSIONAL EXPERIENCE

Tata Institute of Fundamental Research (CERN Collaboration) — **August 2022 - July 2023**
Research Assistant

- Collaborated with Prof. Shashi Dugad (Department of High Energy Physics) to build a Quality Assurance framework for components in printed circuit boards used in the CMS Experiment at the Large Hadron Collider, CERN, Switzerland.
- Worked on applications of computer vision techniques (Object Detection) and CERN's Root framework for data analysis with the QA framework deployed on local Flask instance for TIFR researchers. [Paper under review]

National Institute of Technology, Kurukshetra — **August 2022 - February 2023**
Research Intern

- Worked with Dr. Sarika Jain (Department of Computer Applications) for NLP applications in the legal domain funded by the Department of Science and Technology, Government of India.
- Built a dataset of 53k case documents and conducted multiple experiments with language models for legal judgment prediction using summarization and rhetorical roles in TensorFlow and PyTorch frameworks. [Paper under review]

Atto Infotech — **January 2022 - July 2022**
Software Engineer Intern

- Built full-stack components for web and mobile applications for Edtech clients using React, React Native, and SQL.
- Developed trend forecasting reports for clients using time-series models, clustering, and association algorithms.

ACADEMIC PROJECTS AND PAPERS

KhakiMitra: Speech Emotion Recognition on Live Emergency Calls [Report]

- Developed the project at the National 'Smart India Hackathon' Finale - 2022 to predict an emergency caller's state of influence using call recordings (feature-engineered Mel-spectrograms) and transcripts (keyword extraction in Hindi NLP).
- Won the hackathon under the problem statement by building a synthetic dataset, predicting emotions with a 65% accuracy, and working with the Police Department to integrate the project in real-time with the emergency response systems.

DOT-HAZMAT (Detection Of Threat: Hazardous Materials) [Paper]

- Built a customized convolutional neural network pipeline-based Android application using Pytorch and Tensorflow Lite for real-time detection of 13 HAZMAT signs at accident sites with a precision rate of 98.77%.
- Presented a research paper on this project at ICIRTE 2022 in Elsevier's SSRN(1556-5068) on May 18th, 2022 (Top 10 papers under CompSciRN: Other Applied Computing in August 2022).

TECHNICAL SKILLS

- Languages: Java, JavaScript, Python
- Lib/Frameworks: Node, React, React Native, Tensorflow, Flask, Data Science Libraries (NumPy, Pandas, Scikit-learn, Matplotlib, NLTK, Stanza, Transformers)
- Databases: SQL, MongoDB, Hadoop (HDFS, MapReduce, Hive)
- Tools: Git, Docker, Tableau, CERN Root

COURSES AND CERTIFICATIONS

- Deep Learning and Neural Networks, DeepLearning.AI, Coursera. (October 2021)
- Introduction to Inferential Statistics, Udacity. (January 2022)
- The Complete Web Developer, Zero to Mastery, Udemy. (May 2022)
- Grade 6 and 7 (GESE) B1.2 of the CEFR with Merit (Speaking and Listening), Trinity College London. (December 2015)

EXTRA-CURRICULAR ACTIVITIES

- Participated and worked as a speaker in workshops and hackathons as a Senior Technical Intern at CodeCell, VESIT to promote best technical practices in open-source communities. (2020-23)
- Organized many literary events, such as with Union Bank of India, to hold discussions on corruption laws, etc. as the Head of the Model United Nations (MUN) Division at VES Literature Council. (2020-22)
- Worked as the Junior Reporter at VESIT's monthly newsletter, ' VESIT Connect' where I contributed articles by writing about college events. (2019-21)