# SHAGUFTA ANJUM

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## EDUCATION

**University of Illinois at Urbana-Champaign**                                           Illinois, USA
Master of Computer Science (Incoming)                                           Jan 2024 – April 2025

**Mahindra University**                                                         Hyderabad, India
Bachelor of Technology, Computer Science Engineering                              July 2019 – June 2023
Cumulative GPA: 9.1/10, Major GPA: 9.8/10
<u>Coursework:</u>   Machine Learning, Deep Learning, Big Data, Software Engineering, Database Management Systems, Object-Oriented Programming, Computer Networks, Distributed Systems, Social Computing, Cryptography, Operating Systems, Enterprise Software Architecture, Numerical Methods, Linear Algebra, Statistics

## PROFESSIONAL EXPERIENCE

**Dell Technologies**                                                           Bangalore, India
**Machine Learning Engineer**                                                   *July 2024 – present*
- Using computer vision to identify improperly aligned or overlapping text on product labels printed for laptop boxes in the Dell manufacturing facilities to help in early diagnosis of the issue.

**Software Engineer Co-op**                                                     *Jan 2023 – June 2023*
- Developed a notification management system consisting of a feature-rich dashboard and robust backend APIs to deliver push notifications via a publisher-subscriber model and integrated it with existing systems.

**Software Engineer Summer Intern**                                             *June 2022 – Aug 2022*
- Developed an LSTM model to predict backlogs in the Dell digital supply chain using historical supply chain data. Optimized model parameters to achieve a prediction accuracy of 72% for product backlogs.

**Cognida.ai**                                                                 Hyderabad, India
**Machine Learning Intern**                                                     *Sep 2022 – Dec 2022*
- Developed software to track customer movement in supermarkets by the unique color profile of each customer via surveillance camera feed.
- Leveraged deep-learning based object tracking, image inpainting and super-resolution techniques to overcome low-image quality and occlusion issues and provide accurate, real-time tracking.

## RESEARCH PROJECTS

**Solving Differential Equations using Physics Informed Neural Networks**       *June 2023 – Present*
- Attempted to establish physics informed neural networks (PINNs) as a valid approach to resolve complex aerodynamic phenomena by approximating solutions of the Navier-Stokes equations using PINNs.
- Modelled a cost function using DE residues to allow the networks to learn the DE solution.
- Selected for the ICETCI 2023 conference.

**Multi-Objective Optimal Neural Architecture Search for Autoencoders**         *Sep 2022 – Feb 2023*
- Implemented the Non-Dominated Sorting Differential Evolution (NSDE) algorithm to simultaneously optimize multiple hyperparameters for autoencoder architectures.
- Implemented concurrent task apportioning via parallel programming on hybrid CPU-GPU architecture to speed up the neural network training by 60%.

**Assisted-Living Solution for the Elderly**                                    *Feb 2022 – Dec 2022*
- Designed a product to assist people suffering from vision loss to find items in indoor environments using a wall-mounted camera, object detection software and a voice assistant enabled mobile application.
- Utilized the YOLO algorithm coupled with super resolution imaging to achieve accuracies of 86%.
- Integrated human fall and inactivity detection software.

**Low-Level Fuzzy Similarity Based Indian Music Recommendation** *March 2022 – Aug 2022*

- Employed music information retrieval techniques to extract low-level acoustic features and spectrograms from raw Indian music data.
- Implemented a music recommendation algorithm based on fuzzy clustering of user preferences, incorporating inter and intra genre clustering.

**Leveraging Network Similarity Measure for Recommender Systems** *June 2021 – March 2022*

- Developed a graph-based recommender system for e-commerce products using only local level node similarity measures such as Jaccard index, Sorenson-Dice index, and Hub-promoted index, and demonstrated its effectiveness on the Amazon dataset.
- Published in the ICETCI 2022 conference and selected for oral presentation.

## ACHIEVEMENTS

**Smart India Hackathon - Winner** *Aug 2022*
**Government of India**

- Built a web application that allows users to virtually try on LIDAR-scanned 3-D models of Indian turbans using augmented reality with the aim of promoting Indian cultural attire.
- Secured first place among 10,000 participating teams and received a cash prize of INR 100,000.

**Dean's List** *2019, 2020, 2021, 2022*
**Mahindra University**

- Awarded the academic excellence scholarship worth INR 100,000 in each year of college for consistently securing a rank among the top 5 in the class.

## SKILLS

- **Programming Languages:** Python, Javascript, Java, C++, Scala, Rust
- **ML and DL:** Pytorch, Tensorflow, Keras, OpenCV, Numpy, Pandas, Scikit-learn
- **Database:** MongoDB, MySQL, PostgreSQL
- **Other:** Linux, Shell, Firebase, Git, Apache Spark

## EXTRA-CURRICULARS

Machine Learning Team Member *May 2022 – Nov 2022*
**Autonomous Vehicle Development Group, Mahindra University**
Founder and President *Jan 2022 – Nov 2022*
**Alumni Relations Center, Mahindra University**
Executive Board Member *Sep 2021 – Oct 2022*
**IEEE Student Branch, Mahindra University**
Vice President *Jan 2021 – May 2021*
**Street Cause Hyderabad (NGO)**