

ATIR SHAKHRELIA

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EDUCATION

Northeastern University - Khoury College of Computer Sciences

Master of Science, Computer Science

Boston, USA

Sept 2024 - May 2026

Nirma University – Institute of Technology

Bachelor of Technology, Computer Science and Engineering, GPA: 4.0

Ahmedabad, India

Sept 2020 - Jun 2024

EXPERIENCE

Johnson Controls-Hitachi

Research and Development Intern

Ahmedabad, India

Jan 2024 - Jun 2024

◦ Digital RemoCon via Bluetooth:

- * Developed a reliable Bluetooth communication infrastructure for Hitachi Air Conditioners, leveraging UART protocol; increased connection stability by **33%**, enabling non-line-of-sight (NLOS) communication.
- * Created a user-friendly mobile application using Android Studio that served as a digital remote-control interface, mirroring traditional IR remote functionality and ensuring faster communication between devices by **40%**.
- * Increased the communication range from **7m to 55m**, enhancing the functionality of the digital remote.

Centre of Excellence in Data Science, Nirma University

Research Assistant

Ahmedabad, India

May 2023 - Jul 2023

◦ Instance Segmentation of Blisters:

- * Designed a system to segment blister packets for QR code printing, increasing information retention to **100%** by preserving details like expiration date and batch number.
- * Executed a segmentation solution using **Mask RCNN** and **VIA**, resulting in a **50% decrease** in manual inspection time; the new system streamlined operations for the quality assurance team.

Sixth Sense Info Pvt. LTD

Web Development and Machine Learning Intern

Ahmedabad, India

May 2022 - Jul 2022

- * Developed a robust WordPress-based Content Management System (CMS), significantly enhancing website functionality, usability, and SEO performance, resulting in a **40%** increase in visitor engagement and a **25%** rise in page views.

ACADEMIC PROJECTS AND RESEARCH

Drowsiness Detection for Intelligent Transportation Systems (Deep Learning + Blockchain) [Paper Link](#) [OLink](#) :

- Leveraged **Federated Learning** to train CNN models across decentralized data sources, achieving a high global model accuracy of **97.45%** while maintaining data privacy.
- Implemented a blockchain-based smart contract that integrated detection outputs, improving secure data storage efficiency by **40%**.

Stock Pattern Analysis (MiNeD Hackathon Winner) [OLink](#) :

- Led the development of a pattern analysis system using Python, leveraging **Spearman's rank coefficient** to reduce computation time by **90%** compared to the CNN models used by other teams.
- Achieved **first prize** and received accolades for outperforming all participants in the track.

SoccerScout: A Smart Player Recommendation [OLink](#) :

- Revamped an AI-driven FIFA e-sports recommender system by implementing nested clustering techniques for player categorization; enhanced search methods resulted in a **40%** improvement in relevant player suggestions based on budget.
- Conducted exploratory data analysis (EDA) on **247k** players for data cleaning and feature selection.

Multi-Lingual Handwritten Digit Classification (Deep Learning + Image Classification) [Paper Link](#) [OLink](#) :

- Redesigned a digit recognition system that introduced an innovative multiplexer model, utilizing an acquired dataset of over **100k** images across **5** regional languages and achieved an accuracy of **98.88%**, surpassing present benchmarks.

BookNest: An Ensemble-Based Book Recommendation System (NLP + Machine Learning) [Paper Link](#) [OLink](#) :

- Engineered an ensemble-based book recommendation system by integrating multiple approaches to analyze similarities between user reviews and book descriptions. Attained superior predictive accuracy with a RMSE of **1.273%**.

RELEVANT COURSEWORK

Data Structures and Algorithms, Object Oriented Programming, Computer Architecture, Operating Systems, Databases, Machine Learning, Deep Learning, Big Data Technologies, Data Mining, Blockchain Technology, Compilers, Linear Algebra, Probability and Statistics, Computer Networks, Programming Design Paradigm, Calculus, Programming for Scientific-Computing.

SKILLS

Languages: Python, Java, C++, C, SQL, Unix Scripting, HTML, CSS, Javascript, Solidity.

Frameworks and libraries: Flask, Django, Tensorflow, PyTorch, LangChain, XGBoost, Scikit-Learn, Keras, NumPy, Pandas, Matplotlib, NLTK, Seaborn, Oracle SQL, MongoDB, Github, Postman, Remix ID, Matlab, OpenCV, Hadoop, Spark, Tableau.