Dhruv Kolhatkar

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EDUCATION

North Carolina State University, Raleigh, NC May 2025
Master of Computer Science
Coursework: Design and Analysis of Algorithms, Software Engineering, Automated Learning and Data Analysis

Savitribai Phule Pune University, Pune, India May 2023
Bachelor of Technology in Information Technology
Coursework: Database Management Systems, Operating Systems, Theory of Computation, Object Oriented System Design, Artificial Intelligence, Machine Learning, Cloud Computing

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, HTML/CSS
Databases and Operating Systems: MS SQL, MySQL, MongoDB
Tools/Frameworks: React, Node.js, Flask, SKLearn, TensorFlow, Pandas, NumPy, Matplotlib, Git, Visual Studio

WORK EXPERIENCE

Software Engineer Intern, Atlas Copco, Pune, India April 2021 – July 2021

- Built 2 scalable cloud platforms using Python and MS SQL and deployed on production servers.
- Transformed a paper-based product inventory system on the factory floor to a cloud-based one.
- Created a computer vision model and a web platform for it, capable of identifying design flaws in 10 products, which was used by all stakeholders (floor engineers, supervisors, maintenance, management).

Project Intern, Optimum Data Analytics, Pune, India Dec 2020 – April 2021

- Built a mobile application for internal communication and professional networking within companies.
- Designed and deployed a set of 20+ features(chat, profiles, rooms, etc) spanning 5 modules using a Flask (Python) back-end and MongoDB database and Flutter (Dart) front-end.

PROJECTS

Answer Sentence Extraction and Question Answering

- Compiled a new dataset for Hindi multi-disciplinary QA using data scrapped from the public domain and improved upon existing datasets such as MMQA and MLQA.
- Trained a novel algorithm leveraging dependency relations for question answering and answer selection.

Breast Cancer Classification

- Researched and implemented a convolutional neural network on the BreakHis dataset of microscopic images for the classification of breast cancer achieving an accuracy of 98.7%.
- Completed a comparative study with other classical models such as random forest, support vector machines and state-of-the-art neural networks.

Real-Time Facial Emotion Recognition

- Trained convolutional neural network models for the purpose of facial emotion recognition, giving a maximum accuracy of 91.3%.
- Developed model in real-time using Open-CV for basic image re-structuring (grey-scale, etc.) and Python for the front-end, back-end pipeline.

Holistic Fitness Tracking Platform

- Developed an all-purpose fitness tracking website for calorie and exercise tracking, meal planning and a dedicated wellness marketplace with 4 role logins.
- Built a React.js front-end, Node.js back-end and a MySQL database using sharding, triggers and query optimisation.