

Kshitij Ajaykumar Patel

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EDUCATION

Master of Science, Computer Science

May 2024

University of Southern California, Los Angeles, California

Coursework : Algorithms, Artificial Intelligence, Machine Learning for Data Science, Natural Language Processing

Bachelor of Technology, Computer Engineering

May 2022

Pandit Deendayal Energy University, Ahmedabad, India

GPA : 4.00

TECHNICAL SKILLS

Programming:	Python, R, SQL, C++, C, Java, JavaScript ES6, PHP
Database:	MySQL, MongoDB, Firebase, AWS(DynamoDb)
Data Science/ML:	NumPy, Pandas, TensorFlow, Keras, PyTorch, PySpark, Scikit-Learn, Scipy, NLTK, Gensim, Matplotlib
Platforms/Tools:	Git, Tableau, AWS(SageMaker, S3, Kinesis), Hadoop, MapReduce, Spark, Flask

EXPERIENCE

Machine Learning Intern | Silver Touch Technologies Ltd | Gujarat, India

January 2022—April 2022

- Collaborated in team to devise K-Nearest Neighbors algorithm based Book Recommendation System on IBM Watson Knowledge Studio and integrated with IBM Watson Assistant.
- Employed APIs to extract meta-data about YouTube videos and formulated advanced recommendation engines utilizing BERT, FastText, and TF-IDF Vectorizer to build video recommendation system, leading to an Intra-Similarity score of 0.7233.
- Implemented a REST API based on Flask for deployment and maintained database on the server for regular updates of Recommendation Engine.

Data Science Intern | Silver Touch Technologies Ltd | Gujarat, India

May 2021—September 2021

- Managed exploratory data analysis part for a client. Preprocessed disorganized data about 20000 schools in the UK by utilizing Pandas for data cleaning, data transformation and data integration.
- Applied statistical analysis and employed Data Visualization libraries to transform data insights into graphical representations. Coordinated with development team for cloud deployment and worked with Node.js in backend to provide APIs to retrieve and manipulate data.

Full Stack Web Development Intern | System Engitech Pvt. Ltd | Gujarat, India

June 2020—August 2020

- Created a fully functional website using HTML, CSS, JavaScript and PHP which is currently used by hundreds of clients. Designed back-end logic and developed system-design for queries and data storage and retrieval.

PROJECTS

Time Series Classification for Human Activity Recognition — [Code](#)

Spring 2023

Python, Scikit-Learn, Statsmodels, Statistical Analysis, Time-Series Analysis

- Conducted time-series analysis for seven different human activities, extracting seven time-domain features for each activity.
- Utilized cross-validation and backward selection methods to find statistically significant features and trained classification models to classify activity, achieving an accuracy of 94.73% using Multinomial Naive Bayes algorithm.

Sentiment Analysis of Amazon Customer Review Dataset — [Code](#)

Spring 2023

Python, PyTorch, Scikit-Learn, NLTK, Gensim, NLP, Sentiment Analysis, Machine Learning, RNN, LSTM, GRU

- Preprocessed the dataset and extracted word embeddings using TF-IDF vectorizer. Trained machine learning models including Support Vector Machine (SVM), Recurrent Neural Network (RNN), Long Short-Term Memory (LSTM), and Gated Recurrent Units (GRUs) to classify reviews into three categories.
- Utilized a pretrained model, word2vec-google-news-300, to extract word embeddings and increase the base accuracy by 5%.

Game Playing Agent for Go — [Code](#)

Fall 2022

C++, Artificial Intelligence

- Implemented a Game Playing AI Agent for a 5x5 Go board game. Designed a custom heuristic to find best move for a depth of 7 plys using Alpha-Beta Pruning for Minimax algorithm.
- Defeated Random, Greedy, Aggressive, Alpha Beta and Q-learning game playing agents in over 90% of games.

Abnormality Detection in Musculoskeletal Radiographs Using Deep Neural Networks — [Code](#) | [Report](#)

Fall 2021

Python, Computer Vision, Deep Learning, TensorFlow, Keras, OpenCV, Matplotlib, Scikit-Image

- Trained EfficientNet on MURA dataset to detect fractures in seven different body parts like Elbow, Fingers, etc. with total training time of 23100 seconds on NVIDIA GeForce GTX 1650.
- Applied Edge Detection and Image Sharpening Techniques to enhance base model accuracy by 5%.
- Achieved an average Precision value of 84.55% and outperformed Stanford ML Group's performance in case of Fingers by 11%.