

# Kshitij Ajaykumar Patel

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## EDUCATION

### Master of Science, Computer Science

University of Southern California, Los Angeles, USA

August 2022—May 2024

GPA : 3.75

### Bachelor of Technology, Computer Engineering

Pandit Deendayal Energy University, Gandhinagar, India

August 2018—May 2022

GPA : 4.00

## TECHNICAL SKILLS

**Programming:** Python, SQL, C++, C#(.Net Framework), C, Java, JavaScript ES6, PHP  
**Database:** MySQL, MongoDB, Firebase, DynamoDB  
**Data Science/ML:** Statistical Analysis, ETL Processes, TensorFlow, PyTorch, NLTK, PySpark, Pandas, Matplotlib, Seaborn  
**Platforms/Tools:** GIT, PowerBI, AWS(SageMaker, S3, Kinesis), GCP, Elastic Search, Kibana, Hadoop, MapReduce, Spark, Flask

## EXPERIENCE

### Software Development Intern, Ria Money Transfer, Buena Park, USA

June 2023—Present

- Developed C#(.NET Framework) based Console Application, automating data extraction, preprocessing, and ingestion into server from internal customer files using API endpoints. Significantly reducing data handling time, improving operational efficiency.
- Employing elastic search and kibana to analyze transaction log data and actively involved in building machine learning model for pattern recognition of failed transactions, contributing to enhancing decision-making capabilities.

### Machine Learning Intern, Silver Touch Technologies Ltd, Ahmedabad, India

January 2022—April 2022

- Collaborated with developers to devise K-Nearest Neighbors algorithm based Book Recommendation System on IBM Watson Knowledge Studio and integrated with Chatbot on IBM Watson Assistant.
- Employed APIs to extract meta-data about videos and formulated advanced recommendation engines utilizing BERT, FastText, and TF-IDF Vectorizer to provide personalized recommendations, leading to an Intra-Similarity score of 0.7233.
- Productionalized recommendation system using Flask-based REST API for deployment and maintained dataset.

### Undergraduate Research Assistant, Pandit Deendayal Energy University, Gandhinagar, India

August 2021—December 2021

- Worked under Prof. Samir Patel on project to identify abnormalities in musculoskeletal radiographs. Leveraged transfer learning and trained deep neural networks on MURA dataset to detect fractures in seven different body parts like Elbow, Fingers, etc.
- 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%.

### Data Science Intern, Silver Touch Technologies Ltd, Ahmedabad, India

May 2021—September 2021

- Conducted exploratory data analysis of about 20000 schools in a team. Utilized Pandas for data cleaning and preprocessing and applied statistical analysis and employed Data Visualization libraries to translate data insights into graphical representations.
- Coordinated with development team for deployment and designed APIs to retrieve and manipulate data, enhancing usability.

## PROJECTS

### Generating SQL Queries from Natural Language — [Code](#)

Spring 2023

Python, PyTorch, Generative AI, Natural Language Processing, Semantic Parsing

- Implemented BiLSTM Seq2Vec models in PyTorch based on ACL publication for tasks including selecting aggregation functions, selecting operators, and selecting columns in SELECT and WHERE clauses.
- Employed attention mechanism between columns and questions to enhance the baseline accuracy by more than 10%.

### 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 data, extracted TF-IDF word embeddings and trained models including SVM, RNN, LSTM, and GRU to classify reviews into three categories. Utilized word2vec-google-news-300 for word embeddings to increase base accuracy by 5%.

### Game Playing Agent for Go (Achieved top 10 ranking among 240 peers) — [Code](#)

Fall 2022

C++, Artificial Intelligence

- Implemented AI Agent for 5x5 Go board game. Designed custom heuristic to find best move for depth of 7 plys using Alpha-Beta Pruning for Minimax algorithm. Defeated Random, Greedy, Aggressive, Alpha Beta and Q-learning agents in over 95% of games.

## PUBLICATION

- K. Patel** and M. Patel, "Smart Surveillance System using Deep Learning and RaspberryPi," 2021 8th International Conference on Smart Computing and Communications (ICSCC), 2021, pp. 246-251, doi: 10.1109/ICSCC51209.2021.9528194.