

# Kshitij Ajaykumar Patel

Los Angeles, CA-90007 • patelksh@usc.edu • 774-262-8275  
linkedin.com/in/kshitij-patel-20 • github.com/kapatel20

## EDUCATION

### Master of Science, Computer Science

University of Southern California, Los Angeles, California

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

May 2024

GPA : 3.75

### Bachelor of Technology, Computer Engineering

Pandit Deendayal Energy University, Gujarat, India

May 2022

GPA : 4.00

## TECHNICAL SKILLS

**Programming:** Python, SQL, C++, C#(.Net Framework), C, Java, JavaScript ES6, PHP

**Database:** MySQL, MongoDB, Firebase, AWS(DynamoDb)

**Data Science/ML:** Statistical Analysis, ETL Processes, TensorFlow, PyTorch, NLTK, PySpark, Pandas, Matplotlib, Seaborn

**Platforms/Tools:** GIT, PowerBI, AWS(SageMaker, S3, Kinesis), GCP, Hadoop, MapReduce, Spark, Flask

## EXPERIENCE

### Software Development Intern | Ria Money Transfer | Buena Park, CA

June 2023—Present

- Working in the Core API team, actively developing a Console Application in C# within the .NET Framework to extract data and leverage endpoints for Photo ID verification.

### Graduate Research Assistant | University of Southern California | Los Angeles, CA

May 2023—Present

- Working on semantic segmentation of medical image data under Prof. Rostami. Enhancing knowledge and proficiency in medical image analysis through active research, literature review, and implementation of segmentation techniques on MRI and CT scan.

### 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 Chatbot on 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.

### Undergraduate Research Assistant | Pandit Deendayal Energy University | Gujarat, 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 | 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 on providing APIs to retrieve and manipulate data.

## 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.

### Game Playing Agent for Go — [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 plies using Alpha-Beta Pruning for Minimax algorithm. Defeated Random, Greedy, Aggressive, Alpha Beta and Q-learning agents in over 95% of games.