PREM MODY

www.premmody.com | premdigd@usc.edu | GitHub | LinkedIn | Los Angeles, CA

EDUCATION

Viterbi School of Engineering, University of Southern California, Los Angeles, USA   **Aug 2023 - Present**

Pursuing a Master of Science in Computer Science with Specialization in Artificial Intelligence

Course Work: Analysis of Algorithms, Foundations of AI, Web Technologies, Database Systems, Applied NLP

K. J. Somaiya College of Engineering (KJSCE), University of Mumbai, Mumbai, India   **Jun 2017 - Jul 2021**

Secured a Bachelor of Technology in Information Technology, Rank 1 / 149   **CGPA: 9.67/10**

Acknowledged as Gold Medalist for highest CGPA in Information Technology

Subject/Lab Topper: Artificial Intelligence, Mobile Development, Web Programming I/II, Programming Laboratory II

PROFESSIONAL EXPERIENCE

Teachers Insurance and Annuity Association of America (TIAA), Mumbai, India   **Jul 2021 - Aug 2023**

Software Developer – Technology Analyst – Python, Spark, TensorFlow, Java, Spring Boot, Angular, DynamoDB

- Led the entire team and delivered the R+ project right from designing the architecture to deploying into Production.
- Implemented Random Forest, XGBoost, CATBoost, AdaBoost and Gradient Boosting Trees to predict the clients who will adopt R+ with an accuracy of 96% and classified them into three categories high, medium and low probable clients.
- Utilized K-Means, Birch, Hierarchical, DBSAN and Affinity clustering algorithms to identify distinct clusters of clients.
- Devised sequential and feed forward artificial neural networks to get the probability of clients moving to R+
- Explained the decisions of the above models using Explainable AI techniques like LIME, SHAP and Explain like 5.
- Migrated a project from SQL Server to DynamoDB using Spring Boot and Angular by creating API's, services and models.

K. J. Somaiya College of Engineering, Electronics Department, Mumbai, India

Deep Learning Research and Development Intern   **Feb 2020 – Apr 2020**

- Implemented a computer-vision-based python application using OpenCV that can be used to estimate, classify and track the motion of a person based on a real-time video stream by estimating the locations of key body joints.
- Embodied both ResNet and MobileNet Convolution Neural Networks (CNN) architectures using TensorFlow so that the user can get personalized accuracy and performance.

Deep Learning Research and Development Intern   **Dec 2018 – Jan 2019**

- Researched on various convolutional neural network architectures like AlexNet, InceptionNet, ResNet, R-CNN, VGGNet, Mask-RCNN, and YOLO which can be used to estimate traffic concentration in a region.
- Devised a custom convolutional neural network model with an accuracy of 91% to detect, estimate and track traffic density in a particular area based on a video camera feed and deployed it on Heroku.

K. J. Somaiya College of Engineering, Information Technology Department, Mumbai, India   **Jun 2019 – Jul 2019**

Natural Language Processing Research and Development Intern

- Performed advanced literature survey after reading countless research papers on neural models like Bidirectional LSTM, GRU, BERT, ALBERT, and state-of-the-art techniques for information extraction, categorization and summarization.
- Developed an ALBERT-based utility using Keras to extract, categorize and summarize semi-structured data from any website, and automated the export of the summarized data file to AWS S3 using Boto3.

ACADEMIC PROJECTS AND PAPERS

Internal Classifieds | Python, Django, Scikit-Learn, Dialog flow, MySQL

- Designed and implemented an end-to-end project for creating an Inhouse Online Marketplace after incorporating advanced features like a chatbot for customer support and sentiment analysis for user comments
- Achieved an accuracy of 88% for machine learning-based Sentiment Analysis module using support vector machines.

Docsify | Java, Android Studio, OpenCV, SQLite

- Prototyped an All-In-One document manager application for Android that can scan, store, share and digitize various documents across multiple user devices.
- Embellished latest features like smart-cropping, auto-enhancing, and optical character recognition for recognizing text from the camera and digitized documents to ensure clear and sharp images with premium colors and resolutions.

Accessible Self-Care and Automated Indoor Navigation for COVID-19 Vaccination Centre

- Authored and published a paper on the same in IEEE Xplore on Nov 2021, ISBN: 978-1-6654-1836-2.
- Built a real-time live hotspot map using random forest on RSSI feeds to maintain social distancing in the entire facility.

Automated Shopping and Convenient Wi-Fi Based Indoor Navigation

- Authored and published a paper on the same in IEEE Xplore on May 2021, ISBN: 978-1-7281-8876-8.
- Formulated a NASNet and MTCNN based mask detector network with an accuracy of 98% to work with grouped faces.

TECHNICAL SKILLS

- Programming Languages: Python, JavaScript, Java, C, C++, PHP, SQL
- Technologies: HTML, CSS, Node.js, Express.js, MongoDB, MySQL, SQLite, Spring, Angular
- Frameworks and Tools: Django, Flask, TensorFlow, Keras, Scikit-Learn, OpenCV, Git, Jira, Android Studio
- AWS Cloud: EC2, S3, Route 53, Kafka, EMR, Lambda, Redshift, DynamoDB, Sagemaker

EXTRACURRICULAR ACTIVITIES

- Won Hack-D-Covid Hackathon for developing most accurate COVID-19 detection model, KJSCE's technical fest, 2020.
- Secured an All-India Rank 1 on SoloLearn for completing coding marathons and building the community, October 2018.
- Recognized as Udacity's Intel Edge Artificial-Intelligence, AWS Machine Learning, AWS DeepRacer Scholar, 2019-21
- Suggested and curated the syllabus of various programs at Board of Studies, Somaiya Vidyavihar University, 2019-21
- Orchestrated the Buddy Hand-Holding program 2021 for mentoring 140+ juniors during the period at KJSCE.
- Completed 40+ certifications from various platforms like Udacity, Coursera, Udemy, Codechef, Pluralsight, 2017-22