KUNAL DUDHAVAT

+917240323666 | kunal.dudhavat@gmail.com | LinkedIn | Github | Portfolio

EDUCATION

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, Pilani — Pilani, Rajasthan
B.E. Electronics and Instrumentation — Aug 2017 - Jul 2021
Relevant Coursework: Data Structures & Algorithms, Object Oriented Programming, Operating Systems, Neural Networks & Fuzzy Logic, Foundations of Data Science, Discrete Structures for Computer Science, Microprocessors & Interfacing, Computer Programming
MOOCs: Deep Learning Specialization (DeepLearning.AI)

SKILLS

Languages: **Python3, Kotlin, Java, C++, C, Javascript**
Development Frameworks: **Angular, React, Spring Boot, Express.js, FastAPI, MATLAB**
Database Management: **PostgreSQL, MongoDB, MilvusDB**
Data Visualization tools: **Tableau, MatplotLib**
Python frameworks and libraries: **PyTorch, Tensorflow, PySpark, MLLib, NLTK, Ray**
Cloud & Big Data Frameworks: **Azure, HDFS, Hadoop, Spark, Kubernetes, Docker, Harbor, Airflow, MLOps**

WORK EXPERIENCE

SOCIETE GENERALE GLOBAL SOLUTION CENTER — Bangalore, Karnataka
Software Engineer* (*MyCredit team, Investment Banking Division) — Sep 2021 - Present

Projects:

❖ **User-Centric Email Notification System**

- ➢ Integrated RabbitMQ as the messaging queue for efficient and reliable delivery of real-time notifications to users about crucial platform updates
- ➢ Developed a scalable email generation and dispatch system, ensuring timely and personalized delivery of notifications based on user preferences, enhancing user engagement and satisfaction

❖ **Rapid Issue Resolution System**

- ➢ Developed a POC applying topic modeling techniques to auto-identify major themes in business-critical queries, enabling their swift direction to the relevant teams, ensuring faster resolution
- ➢ Utilized Non-negative Matrix Factorization (NMF) for topic modeling and Random Forest to classify and assign the new user queries to the relevant identified themes
- ➢ Reduced the resolution time by 25%, improving operational efficiency and user satisfaction by enabling swift responses to critical issues

❖ **Advanced Autocomplete Commenting Feature**

- ➢ Developed an MVP for comment autocompletion using the GPT-3.5 model, assisting CRE/RISQ users in their analysis
- ➢ Enhanced user productivity and analysis quality, leading to improved risk assessments

INTERNSHIPS

Aditya Birla Group - Data & Analytics, Bangalore — Bangalore, Karnataka
Data Science Intern — Jul 2020 - Dec 2020

Projects:

❖ **Competitive Intelligence Model to analyze Health Insurance market dynamics**

- ➢ Developed a competitive intelligence model that identified competitors of the health insurance business using spaCy Named Entity Recognition and fuzzy matching

❖ **Commodity price direction forecasting**

- ➢ Enhanced the directional accuracy of the predictions by 15% using BERT transformer model
- ➢ Leveraged the power of sentiment analysis derived from Twitter data into the existing forecasting model

❖ **Automated System for Theme Extraction using LDA**

- ➢ Conducted an Exploratory Data Analysis (EDA) to comprehend and characterize unstructured data for subsequent processing
- ➢ Implemented a Latent Dirichlet Allocation (LDA) model for topic modeling and efficient extraction of primary and secondary themes from the data

Carraro Pvt. Ltd Pune, Maharashtra

Research Intern May 2019 - Jul 2019

Project:

❖ **Mistake proofing system using PFMEA**

- ➢ Designed a smart mistake proofing system and implemented corresponding poka-yoke by identifying and analyzing process failure modes using PFMEA model

ACADEMIC PROJECTS

❖ **Spiking Neural Network Architecture using MTJs**

Department of Electrical and Electronics Engineering, BITS-Pilani Aug 2019 - Dec 2019

- ➢ Designed a fully connected two-layer neural network with Compound Synaptic Matrix (CMS) and Stochastic Spiking Neuron (SSN)
- ➢ Achieved an accuracy of 95.5% for handwritten digital recognition on the MNIST dataset

❖ **Attention based Image Captioning System using ResNet and LSTM**

Department of Computer Science, BITS-Pilani Nov 2019 - Dec 2019

- ➢ Designed a system that automatically generated image descriptions
- ➢ Produced a BLEU-4 score of 29.1%, which was then state-of-the-art perofrmance on the official Microsoft COCO benchmark

❖ **Smart Targeted Advertising based on Hyperlocal Factors using IoT and Computer Vision**

Department of Electrical and Electronics Engineering, BITS-Pilani Jan 2020 - May 2020

- ➢ Developed an user-centric advertising system leveraging IoT sensors, VGGNet for feature extraction, and AWS for data processing and XGBoost algorithm for accurate ad predictions to recommend ads based on contextual and demographic factors
- ➢ Enhanced ad prediction accuracy by 22% by integrating collaborative filtering into the recommendation algorithm to increase ad relevance and user engagement

❖ **Multiplayer Bingo game**

Department of Computer Science, BITS-Pilani May 2020 - Jun 2020

- ➢ Developed a dynamic multiplayer bingo game that supports one moderator and multiple players using Object-Oriented Programming (OOP) principles and design patterns, enabling efficient code organization and enhancing extensibility
- ➢ Implemented multithreading concepts in Java to optimize performance, ensuring minimal delays

TEACHING ASSISTANTSHIP

❖ **Teaching Assistant for the course Microelectronic Circuits (EEE F244)**

Department of Electrical and Electronics Engineering, BITS-Pilani Jan 2020 - May 2020

- ➢ Assisted in the conduction of demo sessions and practical evaluation components for analog circuit simulation in LTSpice for a class of 220 students

LEADERSHIP ROLES

❖ **Project Coordinator, Instrumentation Forum - BITS Pilani**

May 2019 - May 2020

- ➢ Led a team of 20 members to successfully complete multiple high-impact projects in the domains of Artificial Intelligence and Electronics
- ➢ Organized multiple events like Analog Design Challenge, Hackatronics, Circuit Design Challenge for the technical fest APOGEE