GEETHANJALI P

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EDUCATION

Bangalore Institute of Technology, India **July 2019 – May 2023**
Bachelors of Engineering in Electronics and Telecommunication CGPA : 9.07/10

- Relevant Courses: Programming in C, Java, Operating system, Advanced Calculus and Linear Algebra, Network Security, Probability & Random Processes, Information theory and Coding, Digital Image processing, Computer communications network, Cryptography.
- Honors: Merit - Full Tuition Fee Waiver (2019-2023), Scholastic Distinction with "Highest Excellence" in University.

National High School, India **Sep 2016 – May 2017**
Secondary school, KSEEB (GPA/%) : 95.36%

TECHNICAL SKILLS

Languages: Python, SQL, R, C, Java, HTML, CSS, JavaScript, TypeScript, MATLAB, LATEX.
Developer Tools: Jupyter Notebook, Visual Studio Code, Docker, IntelliJ IDEA, PyCharm, Git, GitHub, JIRA, Grafana.
Technologies/Frameworks: TensorFlow, Flask, Agile, Bootstrap, Angular, Jasmine, NodeJS, HTTP, REST API, ExpressJS, MongoDB Jenkins, AJAX, Mocha, Grunt, AWS (EBS, EC2, S3, EFS), Natural Language Processing, Keras, Scikit-learn.

WORK EXPERIENCE

Bosch Global Software Technologies Limited, Bangalore, India ***Feb 2023 – Present***

1) Associate Software Engineer (Promoted from SE Intern) July 2023 – Present

- Worked in an end-to-end Audio based safety solution- Ride Buddy for corporate mobility in India with a revenue potential of £35 million ARR with a backend of both SaaS and HaaS technology and a cloud-based infrastructure.
- Developed a Python backend engine that reduced data downloading time by 50% for parallel requests involving EV fleet data parameters and presented monthly reports of data analysis of fleets to the Manager.
- Managing the Fleet Monitoring and Analytics of eight vehicles involving automated event-based analysis, statistical reporting to check for quality targets and errors, and cloud-based data storage for live tracking and route monitoring.
- Worked on Bosch IoT Cloud and deployment of machine learning APIs on GPU Virtual Machines for seamless accessibility.
- Created dashboards for business using Grafana through Docker containers to visualize and monitor the Bosch SQL database.
- Key technologies: Python, Cloud computing, Machine Learning, Grafana, Docker, MySQL.

2) Software Engineer Intern Feb 2023 – June 2023

- Developed "RB BT," an android app with A2DP profiling that securely connects a standalone Pi model to android phone via Bluetooth ensuring real-time audio streaming to the backend and provides high-security measures for customer biometric authentication.
- Implemented MFA to add an additional layer of security via SMS-based verification and Google Authenticator service to verify the user identities and utilized end-to-end encryption protocols to protect data using OpenSSL and CryptoJS library for high security.
- Trained an LSTM model for concept mastery, achieving a 0.23 AUC performance gain on the validation set with various audio inputs.
- For mobile app development, I utilized Web Bluetooth API for Bluetooth communication, and TensorFlow for implementing the LSTM machine learning model with React Native framework.
- Key technologies: CSS, JavaScript, HTML, Bluetooth API, TensorFlow, Reach Native, OpenSSL, *RCC.*

Bangalore Institute of Technology, India - Haribon Aeronautics ***Sep 2022 – March 2022***

Undergraduate Student Researcher (Bachelor's Thesis, Dr. Rajeshwari M, HOD of ETE, BIT Bangalore)

- Trained a Single-Shot Multibox Detector integrated with MobileNetV2 (SSD-MobileNetV2) model over COCO dataset using Tensorflow API to leverage the capability to detect classes of wild animals during intrusion to avoid human-animal conflicts.
- Compared SSD-MobileNet v2 320x320 and SSD-MobileNet V2 coco model and achieved an optimized speed of 19ms and 31ms respectively.
- Installed this standalone model in Ramnagar Forest, India which is one of the most popular susceptible areas to intrusion.
- Key technologies: Convolutional Neural Network, TensorFlow, Keras, Matplotlib, Numpy, Pandas, Python, PuTTY, GSM, UART.

IC Solutions, Bangalore, India ***Aug 2022 – Oct 2022***

Machine Learning Intern (Research Based)

- Modeled an augmented state-of-the-art model using supervised machine learning classifiers to predict individuals' future risk of Chronic diseases based on the analysis of 76 key attributes with different feature selection approaches.
- Accomplished an accuracy of **90.47%** for Diabetes disease, **96.66%** for Kidney disease and **98.37%** for Heart disease using the Random Forest and Decision tree algorithms.
- Deployed into a web application using Flask framework for easy access for users.
- Key technologies: Machine learning models, Keras, Matplotlib, Numpy, Pandas, Python, EDA, GCP, Flask, CSS, JavaScript, HTML.

PROJECTS

1. MediBot: Covid-19 Pandemic-Resilient AI-Driven Medicine Delivery Solution

- Modeled a Medical robot equipped to serve as an automatic medicine dispenser and delivery system. It monitors vital signs such as heartbeat rate, temperature, and oxygen levels of the patients through sensors.
- Created a dedicated Android application that controls the robot by establishing a Wi-Fi connection for remote control and monitoring.
- Trained LBPH face recognizer for patient identification which utilizes the Viola-Jones algorithm for face detection relying on a modified Haar-Cascade classifier.
- Integrated a H-Bridge-L293D used for navigating hospital environments efficiently with an LM35 sensor into the robot for real-time temperature monitoring of patients. SMS alert is sent to doctors in unfavorable circumstances with higher accuracy.

2. Short Answer Grading using BERT : ShorBERT

- Automated a system for grading short answers using BERT and GPT-2 to preprocess and analyze the data and utilize regression models to make predictions based on the similarity scores between the correct answer and the student's response.
- Achieved a Mean Squared Error (MSE) of 0.04346 by applying Linear Regression to scaled data with RoBERTa scores.

3. LoRa WAN-Based IoT System for Outdoor Air Quality Sensing and Improvement System

- Developed long-range wide area network (LoRaWAN)- based Internet of Things (IoT) air quality monitoring system (AQMS), and implemented a long-range LoRa sensing node for real-time monitoring of air quality indicators.
- Integrated an IoT server with TTN and ThingSpeak platforms for data storage and analysis.
- Designed and launched a user application featuring a web-based dashboard and Virtuino mobile app for easy access.
- Created a user-friendly dashboard and graphical user interface (GUI) for interactive data visualization. Ensured data accuracy and reliability by validating results against the Aeroqual air quality monitoring instrument.

4. AI-Powered Health Assistant Chat-bot | Python, Numpy, Jupyter Notebook

- Automated a health assistant AI chatbot with bare-metal implementations of some common supervised classifiers (Logistic Regression, KNN, Support Vector Classifier, Decision Tree, Random Forest, Gaussian Naive Bayes, XGBoost).
- Accurately communicates and assists the users with higher precision.

5. Streamify: A Custom Entertainment Netflix clone Streaming Platform

- Successfully coded a front-end web page similar to Netflix using HTML and CSS and designed a responsive web page that adapts seamlessly to various screen sizes, ensuring a consistent and user-friendly experience on both desktop and mobile devices.
- Created an interactive user interface with elements such as buttons, dropdown menus, and hover effects, enhancing the overall user experience and achieving a sleek and modern appearance, mirroring the branding aesthetics of Netflix through CSS styling.

RESEARCH PAPER

1. Wild-life detection using Convolutional Neural Network - International Journal of Science, Engineering and Technology

2. Advances in Ecological Surveillance: Real-Time Wildlife Detection using MobileNet-SSD V2 CNN – Springer, International Journal of Machine Learning and Cybernetics

HONORS/ACHIEVEMENTS

- State Scholar: Honored as 5th State Rank Holder (Dean's List) by VTU University, Karnataka (2023).
- Awarded grant for **'Undergraduate research based Major Project'** by Karnataka State Council for Science and Technology (2023).
- Qualified till Round 2 of Smart India hackathon, 2022.
- Received a Merit scholarship for the Undergraduate program (among the Top 5% of half a million students) for securing a higher rank in CET Entrance exam and Academics from the Indian Council (AICTE) in 2019.
- District Level Chess player (2016) and has won a Chess competition thrice in a row.
- Awarded as "Best Content Writer" by Giftabled NGO, Bangalore.

POSITIONS/RESPONSIBILITY/EXTRA-CURRICULUM

- Student Placement Coordinator, BIT: Interviewed 15+ candidates for Placement Cell, facilitating placement for graduates in various company roles.
- Rotaract club, President, BIT: Organized and led a successful Blood Donation Camp in BIT Campus for students and volunteers, in collaboration with one of the most popular NGOs in India, Lion's Club International.
- Eco-Club, Member, BIT, organized and made posters to gain volunteers to actively participate in "Swachh BIT" Cleanliness Drive.
- Volunteered at a Job Fair & Youth Empowerment event, in Bangalore, facilitating access to job opportunities, self-employment options, and empowerment programs for diverse participants, including various educational backgrounds.

CERTIFICATIONS

- Full Stack Web Developer- MEAN Stack Master's program: Simplilearn
- Supervised Machine Learning: Stanford University Online
- Mastering Data Structures & Algorithms using C and C++: Udemy
- IBM Python for Data Science, AI, and development: Coursera
- IBM Introduction to Data Science: Coursera