Mahadev Mahesh Maitri

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Education

University of Delaware — Newark, DE
Master of Science in Computer Science — 2022 – 2024

R. V. College of Engineering — Bengaluru, India
Bachelor of Engineering in Electronics and Communication Engineering — 2016 – 2020

Technical Skills

Programming Languages: Python, JavaScript, TypeScript, C/C++, HTML, CSS, SQL
Frameworks: ReactJs, Bootstrap, Redux, Robot Framework, MongoDB, JMeter, Jenkins, Flask, NextJs, PyTorch, TensorFlow
Developer Tools: Git, Chrome Developer Tools, VS Code, Google Cloud, Amazon AWS

Relevant Experience

Swechchha — Remote
Back-end Developer - Part Time — Dec 2022 – Jan 2024

- Implemented comprehensive restructuring of data tables, transforming them into a relational database, resulting in streamlined data management and improved efficiency.
- Enhanced the codebase to ensure error-free and fail-safe operation, while also introducing innovative features such as a payment system and a location-based search, enhancing user experience and functionality.
- Optimized Round-Trip Time (RTT) for request calls, resulting in faster response times and improved overall performance of the application.
- Successfully oversaw the maintenance of all servers and managed development cycles using Jenkins and Amazon EC2, ensuring seamless operations and facilitating continuous improvement.
- Initiated a project aimed at addressing challenges in government toilet desludging in slum areas, focusing on efficient management of operations, facilities, and timely resolution of user complaints to the BMC.
- Actively contributed to projects under the VESIT College of Engineering and the Brihanmumbai Municipal Corporation (BMC), securing funding from reputable institutions such as the State Bank of India and Star Union Daichi, highlighting commitment to social responsibility initiatives. Links: Android Apps, Web Link

English Language Institute - University of Delaware — Newark, DE
Instructor — Aug 2023 – Dec 2023

- Successfully instructed a class of over 10 students in CISC106: General Computer Science for Engineers, delivering structured syllabi and coursework to facilitate comprehensive learning.
- Provided hands-on supervision and guidance to lab assistants, ensuring effective execution of lab work and reinforcing theoretical concepts taught in class.
- Proficiently taught Python and MATLAB, integrating instruction on fundamental libraries such as math, and facilitated the completion of three projects focused on practical applications, including file reading for tour recommendation, Cramer's rule for equation solving, and game development utilizing the pygame library.

Optum - UnitedHealth Group — Bengaluru, India
Associate Software Engineer - II — Jul 2020 – Jul 2022

- Orchestrated the creation and refinement of User Interfaces utilizing ReactJs and Redux, tailored to meet precise business requirements, culminating in comprehensive demos to the Business Team that effectively showcased implemented functionalities and features.
- Spearheaded optimization efforts for front-end microservice functionality, significantly improving page loading times and implementing advanced data management strategies through Redux, thereby enhancing the efficiency and responsiveness of the user interface within the Integrated Eligibility (IE) project, contributing significantly to project success over a one-year engagement.
- Directed the implementation of an end-to-end functional regression testing suite utilizing Robot Framework and conducted rigorous performance testing of REST APIs with JMeter, establishing expertise in tackling complex features and earning recognition as the go-to authority for specific challenges. Ensured the quality and reliability of development servers within the Optum Medicaid Management Services (OMMS) project by executing and analyzing all test suites bi-weekly for a year, ensuring robustness and reliability of the system.

Electronics and Radar Development Establishment (LRDE), DRDO — Bengaluru, India
Trainee — Jan 2020 – May 2020

- Pioneered the development of an advanced Automatic Target Recognition solution for ships utilizing cutting-edge Deep Learning algorithms, resulting in enhanced accuracy and efficiency in ship identification.
- Engineered a sophisticated GAN framework with CNNs to effectively extract features from ISAR images, significantly expanding the dataset and improving the accuracy of ship recognition.
- Implemented transfer learning techniques leveraging the MobileNetV2 network for ship classification, achieving an impressive accuracy rate of 89.6%, demonstrating proficiency in leveraging state-of-the-art methodologies for superior results.
- Produced a comprehensive dataset of ISAR images utilizing ANSYS Electromagnetics SBR+ with 3-D ship models, ensuring the authenticity and reliability of the dataset for accurate representation of ship features.
- Authored and published a research paper titled "Classification of Ships using ISAR Images with a Combined Deep Transfer Learning and GAN Processing Framework" in the esteemed International Journal of Engineering Research & Technology (IJERT), contributing valuable insights to the field of ship classification and recognition.

PTO

Wipro IISc Research Innovation Network (WIRIN), IISc Bengaluru, India

Project Intern Jun 2019 – Jul 2019

- Significantly accelerated inference timing and frames per second for input video streams through the implementation of sequence-by-sequence batch augmentation of video frames, resulting in enhanced efficiency and responsiveness of the system.
- Optimized the performance of the semantic segmentation algorithm by reducing processing time and increasing segmentation accuracy, leading to improved overall performance and reliability of video segmentation processes.

PROJECTS

Poultry Farms to Manage Depopulation Using Nash Equilibrium through MR Simulation

C#, Unity Engine Sept 2023 – Dec 2023

- Developed a pioneering Nash Equilibrium strategy to maximize revenue generation for poultry farms, utilizing game-theoretical principles to optimize management practices such as timing of vaccination, depopulation, and risk management.
- Implemented a mixed reality simulation to train personnel and simulate various scenarios, fostering enhanced decision-making skills and contributing to the overall effectiveness and profitability of the approach.

Sudoku using Backtrack Search

Python, Flask, HTML, CSS Feb 2023 – May 2023

- Developed a user-friendly Flask application for solving Sudoku puzzles, integrating advanced algorithms such as AC3 and Backtracking search, enabling users to tackle both predefined puzzles and custom inputs with ease.
- Implemented step-by-step solutions with color-coded clarity and efficiently managed failed values using binary constraints in the AC-3 algorithm, enhancing user experience and facilitating successful puzzle resolution.

Cryptocurrency Price Forecasting

Python, TensorFlow, Numpy, Pandas, Matplotlib Sept 2022 – Dec 2022

- Contributed to a collaborative effort with a team of three in developing neural networks aimed at predicting cryptocurrency prices, employing an ablation study methodology to refine model architectures and hyperparameters.
- Utilized data analysis from Binance Data Vision to identify optimal configurations, determining that a single layer of LSTM with 128 units yielded the most accurate predictions. Additionally, recognized the potential effectiveness of the 1D-CNN with LSTM architecture, particularly in scenarios where supplementary data streams, such as current news, are accessible, thereby informing strategic decision-making for cryptocurrency trading.

Detection of Common Plant Diseases using Convolutional Neural Network

Python, PyTorch, Numpy, Pandas, Scikit-Learn Aug 2018 – Nov 2018

- Spearheaded the development of an innovative solution to combat common plant diseases, utilizing a Convolutional Neural Network (CNN) to detect diseases early and provide timely recommendations for weedicide application.
- Collaborated with a team of two to collect and preprocess the dataset, and constructed the classifier using CNN architecture, contributing to improved agricultural practices and increased crop yield through disease management.

ACHIEVEMENTS

- Won the Creativity Award at the DS+AI Hackathon 2023 for the work towards the ”Generating High-quality, Fine-scale Precipitation Dataset for the Great Lakes Region Building upon Existing Dataset”. (https://sites.udel.edu/ai/dsai-summer-hackathon-2023/)
- Published a paper on “Face Aging Through Uniqueness Conserving by cGAN with Separable Convolution” in Sustainable Communication Networks and Application, Proceedings of ICSCN 2020.
- Secured the second place out of 30 participating teams in Hackathon (Blockchain Hackathon 2019) organized by NextGrids and powered by JUiNCUBATOR, a TBI supported by DST, Government of India and JAIN(Deemed-to-be-University).
  - Built a smart contract using Ethereum for verification of employee background check and deployed on to IBM Blockchain platform. To demonstrate, we developed a sample Angular website to perform the transactions.
- Secured the first place out of 50 participating teams in Hackathon (Stay Late And Code, 2019) organized by Amrita School of Engineering sponsored by General Electricals Healthcare.
  - Built a Machine Learning model for Speech Recognition (offline) with help of Recurrent Neural Network and implemented an Android Application using the same model’s lite version for efficient computation as demo which could be implemented in medical appliances.

VOLUNTARY WORK

- Served as the Website Manager for IGSA, overseeing the comprehensive redesign of the WordPress site. Implemented enhancements to showcase upcoming events, student information and news, and curated photos and videos captured during events. Additionally, took a leadership role in planning and executing various events hosted by IGSA. sites.udel.edu/igsa/

TRAINING AND CERTIFICATIONS

- Structuring Machine Learning Projects from Coursera. (2020)
  (Link: https://coursera.org/account/accomplishments/certificate/2JGT88YLP7AR)
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization from Coursera. (2020)
  (Link: https://coursera.org/account/accomplishments/certificate/Z4L6ZPBD5XQT)
- Neural Networks and Deep Learning from Coursera. (2020)
  (Link: https://coursera.org/account/accomplishments/certificate/XCLPC88BC5N3)
- Machine Learning Basic Nanodegree from Udacity India. (2018) (Link: https://confirm.udacity.com/RSXCMEGL)
- Android Foundation Nanodegree II from Udacity India. (2018) (Link: https://confirm.udacity.com/HJP5C35N)