Amol Kerkar

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Education

State University of New York — Binghamton, NY
Master of Science in Computer Science — *Aug. 2023 – May 2024*

K.J. Somaiya College of Engineering — Mumbai, India
Bachelor of Technology in Electronics Engineering — *Aug. 2017 – May 2021*

Experience

Automation Engineer — Sep. 2022 – Aug. 2023
Larsen and Toubro Technology Services (LTTS) — *Navi Mumbai, India*

- Developed and deployed an Android Debug Bridge-based utility to extract Human-Machine interface layouts. Identified anomalies and improved UI accuracy, leveraging Keras-OCR and advanced image processing techniques resulting in enhanced user experience and increased customer satisfaction
- Built an Autoencoder - CNN model to automate defect findings for almost 3000 HMI menus
- Developed services packages for XML-parsing, and Python scripts for automating the entire test environment in the ECU-Test for the Human-Machine Interface domain

Assosciate Engineer — Oct. 2021 – Sept. 2023
Larsen and Toubro Technology Services (LTTS) — *Navi Mumbai, India*

- Automated and developed Some/IP scripts for communicating with the BMW test rack's Media Graphical Unit (MGU) to imitate real-time car environment
- Presented to the client an idea of Excel-driven navigation automation using a custom-made library for Android infotainment using Appium
- Developed a utility containing various Image comparison applications for LINUX-based infotainment systems using Python's machine learning and computer vision libraries.
- Developed a Python utility that extracted the information on the Car's Instrument cluster from the Media Graphics Unit using the SSHv2 protocols

Engneering trainee — July 2021 – Sept. 2021
Larsen and Toubro Technology Services (LTTS) — *Navi Mumbai, India*

- Advanced C Programming: (Project: Mall management system)
- Advanced Python: (Project: Detailed Marksheet evaluation system)
- Embedded C: (Project: Button control using STM32)
- MatLab and Simulink : (Project: Implementation of a car's Interior lighting, Rear LED module, seat control, and Tire pressure monitoring system in MatLab and Simulink)

Robotics Intern — June 2019 – July 2019
K.J. Somaiya College of Engineering — *Mumbai, India*

- Designed and built a robot "Car-Bow", a prototype compact combat vehicle
- Designed an Android application that allows the user to control the movement of the robot using Bluetooth
- Coded the Microcontroller to establish communication between the actuators and the Android app using the HC-05 Bluetooth module

Projects

Music Genre classifier using CNN | *Python, CNN, Tkinter* — June 2020

- Identified features including Mel-frequency cepstral coefficients (MFCC), Spectral centroid, zero crossing rate, Chroma frequency, and Spectral roll-off from the database of 1000 audios including 100 audios of 10 music genres.
- Designed a Convolutional neural network (CNN) model and classifier algorithms to predict the genre of any audio clip in realtime +
- Developed a GUI for user interaction and visualization

Accident prevention and ADAS | *Python, CNN, Computer vision* — Jan 2023

- Designed a system for live analysis of tire tread depth using Computer vision.

- Designed a lane and road-type identifier using a CNN model trained on a large dataset containing road types like gravel roads, water-logged highways, etc.
- Designed a driving style classifier based on the lateral and longitudinal acceleration values of the sensor in the car
- Designed a suggestion system for warning the driver via the car's speaker to prevent conditions like hydroplaning, skidding, and vehicle rollover.

Technical Skills

Languages: Python, C/C++, SQL, HTML/CSS
Frameworks: Tensorflow, Keras
Developer Tools: Git, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Libraries: Pandas, NumPy, Matplotlib, Scikit-learn, Seaborn, Tkinter

Extra curriculum

- Won Intra college hackathon by building the model of a "Smart medicine reminder and vending machine" from scratch in 36 hours under the category of student innovation
- Won the third prize in the Somaiya Pentathlon organized by the Somaiya Sports Academy for the under-25 age category which consisted of 100m sprint,400m run, 800m run, shot-put, and long jump.
- Been a part of the college Kho-Kho team and represented the college at various inter-university tournaments, part of the departmental football team
- Played a role of a pianist in the Electronics department's music band
- Top 22 among all the employees across the global offices of LTTS in TechExpression™ - An innovation challenge
- Part of the organizing committee for the college's tech festival "Abhiyantriki" and also the sports festival "Skream"