Sahil Patel

EDUCATION

(MEng) Mechanical and Electrical Engineering

University of Bristol
2018-2022

A Levels

Wembley High Technology College
Maths (A*), Further Mathematics (A), Physics (A), Chemistry (A)
2016-2018

TECHNICAL SKILLS

Javascript	Python
HTML	C++
CSS	SQL
Azure Functions	MATLAB
Git	MS Office
Node.js	Azure Static Web Apps

CONTACT ME

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Git:
https://github.com/onlysilvercrow

WORK EXPERIENCE

Online Assistant — 2022 - 2023
Sainsburys PLC

- Refined effective time management and multitasking abilities in a fast-paced environment.
- Showcased flexibility and adaptability by navigating changes and learning new systems and procedures.
- Demonstrated excellent problem-solving skills to address customer concerns and provide satisfactory resolutions.

PROJECTS

Bio-Inspired Artificial Intelligence

- Improved MATLAB programming skills by creating a species recognition model for wide area animal monitoring using drones.
- Gained experience in data filtering, feature selection methods such as the quantization of SURF features using k-means clustering, and reporting test results from validation sets using confusion matrices.
- Engaged in collaborative teamwork to develop a comprehensive business model, encompassing initial funding strategies, projected timeframes for capital investment recovery, and consideration of ethical and regulatory implications.

Microcontroller Programming Experience

- Became well-versed in C++ to effectively program a micro-controller integrated onto a Pololu 3Pi+ robot, enabling me to automate the line following task.
- Implemented a PID controller and adapted it to estimate the slope inclination angle by harnessing the feedback signal.
- Developed expertise in debugging hardware and software systems.

F1 Website
https://ambitious-pebble-02008e903.2.azurestaticapps.net/

- Developed a comprehensive full-stack application utilizing React for the frontend and Node.js for user authentication, integrating Formula 1 data from an online API.
- Refactored the backend to leverage Azure Functions for cost savings.
- Implemented visually appealing graphs showcasing crucial metrics such as drivers' fastest lap times and race lap times.
- Currently working on obtaining live data over UDP connection from F1 2022 game for real time display.

Cryptography (Python Implementation)

- Implemented the Caesar Cipher for automated encryption/decryption, utilizing key-based shifting and leveraging a pre-existing database of words for automatic decryption. Also acquired knowledge of cryptography techniques.

Error Correction/Detection for Data Transmission

- Learnt about error correcting performance of various encoding/decoding techniques such as repetitive code, hamming code, binary convolution code and Viterbi decoding algorithm which are essential for communications systems.
- Theoretical and simulation-based approaches, such as Monte Carlo simulations, are used to analyse and evaluate the performance of different encoding and decoding methods by generating graphs of Bit Error Rate (BER) against the probability of error.

Bristol Electric Racing

- Designed and assembled RTDS (Ready-To-Drive-Sound) and pre-charge circuitry for an electrical car to participate in the Formula Student Competition.
- As part of a multidisciplinary team, collaborated with various specialists to determine circuit placement on the chassis and housing design.
- Incorporated an AGILE development approach that involved the use of sprints to efficiently handle the design process.