SHUBHAM SINGH

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EDUCATION

University of Liverpool Jan 2021 - Jan 2022
MSc in Computer Science: Distinction (Predicted) Liverpool, U.K.

Delhi Technological University Aug 2014 - May 2018
Bachelor of Technology in Engineering Physics (Major in Electronics): First Class Delhi, India

RELEVANT COURSEWORK

Applied Algorithms, Database Systems, Data Mining, Web Development, Computational intelligence, Safety and Dependability

SKILLS

Languages	Python, JavaScript, C/C++, PHP, HTML/CSS, MySQL
Technologies	Linux, Git, Django, React, NodeJS, Docker, Heroku, Netlify
Developer Tools	VS Code, GitHub, Jupyter Notebook, MATLAB

EXPERIENCE

Research Assistant Jun 2017 - Jan 2020
Swansea University Swansea, U.K.

- Implemented a multi-threaded, concurrent execution of signal strength read and switch functionality for an industry grade GPS. Utilised POSIX thread library in C. Achieved low-latency with 85% accuracy.Created a system GUI using GTK.
- Automated 3D simulation of high mesh count electromagnetic models using a Python API that fetched large data-set for adaptive optimisation and post-processing in MATLAB. Reduced the analysis time by 1 week.
- Built an interface for a piezoelectric precision pump to drive liquid metal in micro-fluidic channels used in reconfigurable electronics. Designed a GUI using Tkinter library in Python.

PROJECTS

Online Board Game Design [Dissertation] | React, NodeJS, Socket.io, Heroku Sep 2021 - Dec 2021

- The aim of the project is to create an online browser version of a multiplayer role-play board game *tempel des schreckens.*
- Created a front-end UI with React with several functionalities to join a game room, chat in real-time and send player moves.
- Used NodeJS and Socket.io for the back-end application that handles the user requests, chat threads and the game state.
- Deployed the server-side application on the Heroku cloud service and the front-end application on Netlify hosting service.

Data Science Capstone Projects | Python, NumPy, Google Colaboratory Jun 2021 - Aug 2021

- Implemented and trained the multi-layer perceptron model on a given data set to achieve an accuracy of more than 90%.
- Utilised the Artificial Neural Network to simulate some toy problems in such as the XOR gate, asymmetry checking, etc.
- Optimised the model for different parameters using Genetic Algorithm and Particle Swarm Optimisation for better accuracy.

Autonomous Underwater Vehicles | C, NI LabView Dec 2016 - Feb 2017

- Worked on the acoustic signal processing unit, a part of the navigation system in an indigenous underwater explorer.
- Implemented a band-pass filter on an high-sensitivity data acquisition module for 3-D localization of a sound source.

Unmanned Aerial Systems | ROS, Python Jul 2015 - Jul 2016

- Setup a local SFTP server on the aircraft's on-board computer to achieve interoperability with a target remote server on the ground over WLAN. Integrated ROS to interface critical processes - Flight Control, Propulsion and Obstacle Detection.
- Developed an object size estimation feature in Python using the attributes such as Image Resolution and Orientation, Geotags, Inertial Measurement Unit data and Altitude from the aircraft.

HONORS & AWARDS

- MBDA 2-star European Innovation Award 2019 in the 'Early Innovative Concept' category bagged by Swansea University
- WICED Build Hackathon 2015, Broadcom limited and SR-DTU - Winning prototype for an project IoT project *TravelSense*