

# SAMEEN ISLAM

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## EDUCATION

<b>University of Southampton</b> Master of Science (MSc) Artificial Intelligence	Graduated in 2021
<b>Queen Mary University of London</b> Bachelor of Science (BSc) Computer Science	Graduated in 2018

## WORK EXPERIENCE

<b>Accenture</b> <i>System Developer Analyst</i> <ul style="list-style-type: none"><li>Support senior developers to produce tools for pricing interest-rate derivatives.</li><li>Provided real-time desk support to traders after delivery of custom tool.</li><li>Software developer within product team of a web-app used by banks for configuration and management of their trading platform.</li></ul>	City of London 2018 - 2019
<b>Airbus</b> <i>Spacecraft Database Developer (Intern)</i> <ul style="list-style-type: none"><li>Approved to work on site for a List-X UK Govt. contractor, having passed DBS checks.</li><li>Developed desktop applications using Java to support Mars Rover database team.</li><li>Documented projects under self ownership and presented them to database teams.</li><li>Mentored junior intern on internal processes and supervised their projects.</li></ul>	Stevenage 2016 - 2017

## TECHNICAL SKILLS

Languages: Python, Java | Machine Learning: Pytorch, Sklearn, Scipy, OpenCV, Numpy, Pandas, Matplotlib | Robotics: ROS | Distributed Computing: MapReduce, Spark | HPC: SLURM | Database: MySQL, MongoDB | Web: Flask, Django, jQuery | Cloud: Heroku | Simulation: Gazebo, Unity | Mobile: Flutter | Version Control: Git | CI/CD: Jenkins

## PROJECTS

### Computer Vision: Addition and Subtraction of Handwritten Digits

Teach a deep learning network to perform addition or subtraction based on digits seen in a pair of images.

- Developed a custom dataset and dataloader pipeline with data derived from MNIST handwritten digit dataset.
- Used PyTorch framework to build a deep learning network architecture capable of recognising digits and learning to perform addition in an end-to-end manner.
- Added a 'shared-head' on top of the addition ConvNet to make the network multi-modal (supply image and non-image data as input), then fine-tuned it, to perform end-to-end subtraction of digits.

### Signal Processing: Brain state prediction using neural signals

Developed machine learning model to detect anomalies based on time-series data from the brain.

- Extracted signal features using autocorrelation-moving average (ARMA) and discrete Fourier transform (DFT).
- Generated prediction signal using SVM classifier with different kernels (i.e. linear, radial basis).
- Regularised noisy prediction signal using mean average (MA) and Kalman filter (KF).

### Reinforcement Learning: Q-Function Approximation with Radial Basis Network

AI agent learns to push a car uphill by controlling its acceleration in the OpenAI Gym simulation.

- Used off-policy Q-Learning with  $\epsilon$ -greedy exploration-exploitation strategy to learn the optimal policy function.
- Estimated the optimal policy using a Radial Basis Function network to use with on-policy SARSA so that agent could improve its estimation of value function with experience.

### Computer Vision: Scene Recognition

Investigated the performance effect of model complexity and feature selection on a scene classification task.

- Trained k-nearest neighbour (KNN) model on 'tiny images' feature representation.
- Trained Support Vector Machine (SVM) using Histogram of Oriented Gradients (HoG) feature representation.

## AWARDS AND RECOGNITION

- Grand prize of £11,500 awarded to hackathon team, during undergraduate studies (awarded by Sabre Corporation).
- Only student in the faculty selected for Cambridge Long Vacation Scheme Scholarship, during undergraduate studies (awarded by Queen Mary University of London).
- Grant of £3,600 to present in 'Aging2.0' conference, during undergraduate studies (awarded by Queen Mary University of London).