

SAMEEN ISLAM

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EDUCATION

University of Southampton

Master of Science (MSc) Artificial Intelligence

Graduated in 2021

Queen Mary University of London

Bachelor of Science (BSc) Computer Science

Graduated in 2018

WORK EXPERIENCE

Accenture

System Developer Analyst

City of London

2018 - 2019

- Support senior developers to produce tools for pricing interest-rate derivatives.
- Provided real-time desk support to traders after delivery of custom tool.
- Software developer within product team of a web-app used by banks for configuration and management of their trading platform.

Airbus

Spacecraft Database Developer (Intern)

Stevenage

2016 - 2017

- Approved to work on site for a List-X UK Govt. contractor, having passed DBS checks.
- Developed desktop applications using Java to support Mars Rover database team.
- Documented projects under self ownership and presented them to database teams.
- Mentored junior intern on internal processes and supervised their projects.

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 ϵ -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).