

# SAIF ANWAR

## PhD Computer Science Student

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🔗 Google Scholar: <https://bit.ly/3QvJB3R>

## EXPERIENCE



### Senior Graduate Teaching Assistant

📅 October 2021 - Present

📍 Coventry, UK

- Teaching seminars for CS255: Introduction to Artificial Intelligence
- Leading lab sessions for CS429: Data Mining
- Marking submissions from undergraduate and postgraduate students

## TOSHIBA

### Research Intern

📅 February 2020 - September 2021

📍 Bristol, UK

- Researched communication reduction for federated machine learning.
- Developed and implemented methods using Tensorflow and PyTorch.
- Deployed within a distributed AI architecture and tested using various datasets.
- Filed patents to protect developed work and publishing research.



### Quantum Communications Researcher

📅 June 2021 - September 2021

📍 Bristol, UK

- Developed a graphical simulation of the Starlink network in Python.
- Integrated geographical system for Earth to Space network communication.
- Developed framework for deploying various network topologies in LEO satellite constellations and quantify their performance in terms of network latency.

### Electronic Design Engineer Intern

#### Elementar UK Ltd.

📅 August 2016 - September 2016

📍 Manchester, UK

## EDUCATION

### PhD Computer Science

#### University of Warwick

📅 2021 - 2025

- Researching Explainable Artificial Intelligence and Transparent Machine Learning in the context of future transport.

### MEng Computer Science & Electronics (First Class Honours)

#### University of Bristol

📅 2017 - 2021

- Relevant Modules: Algorithms COMS10007; Symbols, Patterns and Signals COMS21202; Machine Learning COMS30007; High Performance Computing COMS30005; Image Processing and Computer Vision COMS30121; Applied Deep Learning COMSM0044; Information Processing and the Brain COMSM0074; Robotics Systems EMATM0053
- 3<sup>rd</sup> Year Industrial Project Dissertation: "Adaptive Communication Reduction for Federated Machine Learning" (78)
- 4<sup>th</sup> Year Individual Research Project Dissertation: "A Graphical Simulation & Routing Protocol for Intersatellite Network Constellations" (75)

### A Levels

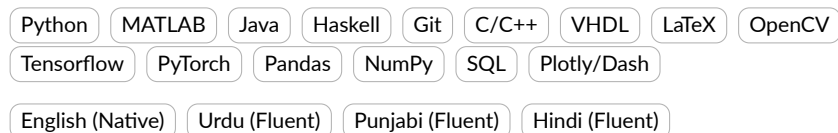
#### Loreto College

📅 2015 - 2017

📍 Manchester, UK

- Maths (A\*), Further Maths (A), Physics (B)

## SKILLS & LANGUAGES



## CERTIFICATIONS

### Publications

- "Large - Scale LEO Satellite Constellation to Ground QKD links: Feasibility Analysis," 2022 IEEE International Conference on Space Optical Systems and Applications (ICSOS), 2022, pp. 288-295, doi: 10.1109/ICSOS53063.2022.9749743.

### Patents

📅 Filed 2020, Published 2022

- System and Method for Selective Updates in Federated Learning - US20220156574A1
- System and Method for Adaptive Compression in Federated Learning - US20220156633A1

### Gold CREST Award for STEM

📅 2016

- Completed a Nuffield Research Placement conducting research with Isoprime Ltd (Elementar UK) in the field of electronic engineering.

## OTHER ACTIVITIES

### Google Hashcode

📅 2019

📍 Bristol, UK

- Group competition hosted by Google Inc.
- Developed an AI algorithm to create a slideshow of images using features to maximise 'interest' metric.

### ARM Make-a-thon

📅 2019

📍 Bristol, UK

- Group competition at University of Bristol.
- Built an AI based automatic pet feeder
- Programmed an Arduino UNO to provide automation functionality and movement recognition through ultrasonic sensors.
- 3D printed and laser cut a casing for the system

### Founder & President: Hip Hop Society

#### University of Bristol

📅 2018 - 2020

- After noticing a lack of representation for the culture and community within the university, gathered a committee and member interest to create the society through the Students Union.
- Hosted multiple large scale events by creating partnerships with local businesses.
- Created a plan for the future of the society and mentored the incoming committee following my departure.

### Member of Student Council

#### University of Bristol

📅 2018 - 2020

### Manchester United Youth Foundation Football

📅 2013 - 2016

📍 Manchester, Old Trafford