

Ira Shokar

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PhD Student at the University of Cambridge's Department of Applied Mathematics & Theoretical Physics researching applications of Machine Learning to Atmospheric Fluid Dynamics.

Technical Skills: *Languages:* Python, Julia, MATLAB & C++. *ML Frameworks:* Tensorflow, PyTorch, Scikit-Learn, & GPy. *Distributed Computing:* JASMIN, Fawcett (DAMTP HPC System), UCL High Energy Physics Linux Cluster, AWS Batch. *Unix-like OS:* Debian-Based Linux Systems & MacOS. Basic HTML & CSS. Git, L^AT_EX.

Education

Pembroke College, University of Cambridge

Cambridge, UK

PhD. Applied Mathematics - Application of Artificial Intelligence

October 2020 – Present

- o Awarded UKRI EPSRC funding to study at the CDT in the Application of Artificial Intelligence for Environmental Risks.
- o **Research Topic-** 'Deep learning to predict dynamics on an inertial manifold of mid-latitude jet systems'.
 - Co-Supervised by Professors Peter Haynes & Rich Kerswell at DAMTP.
- o **Teaching** - 2022 : Supervised Part II Computer Science - Deep Neural Networks.
- o **Organised Workshops** - 2022 : Cambridge Centre for Climate Science Machine Learning for Climate Science Workshop.
 - Along with 2 other graduate students, we organised a workshop introducing Machine Learning to researchers in the atmospheric sciences with 3 interactive sessions & a hackathon implementing ML on real world atmospheric data.
 - Attendance reached capacity with 30 attendees. Resources can be found [here](#).

University College, University of London

Bloomsbury, London

BSc. Physical Natural Science - Theoretical Physics

September 2017 – June 2020

- o **1st Class overall** - 1st Class in all 3 years & thesis.
- o **Thesis:** 'Deep Learning Classifier Robustness for Neutrino Event Detection using Domain Adversarial Neural Networks'.
 - [Python:Tensorflow; C++:ROOT]. Supervised by Dr Chris Backhouse.

Tiffin School

Kingston-Upon-Thames, Surrey

- o **A-Levels** : 2A* in Mathematics & Further Mathematics; 2A in Economics & Physics (2017).
- o **AS-Levels**: 6A in above subjects & in History & Physical Education (2016). **GCSEs**: 6A* & 4A grades (2015).

Projects

- o **Assessing Temporal Change In The Exposure Of Informal Settlements Through Repeat Satellite Observation.** 2021
 - Group Project [Python:PyTorch, Tensorflow; JASMIN]. Supervised by Dr Anita Faul.
- o **Quantifying the effectiveness of natural hazard preventions by predicting rainfall runoff in flood risk mitigation.** 2020
 - Group Project [Python:PyTorch]. Supervised by Dr Oscar Branson.
- o **HPGe Detector Gamma Ray Spectroscopy simulation of nuclear emission & detector interactions.** 2020
 - Group Project [C++:ROOT, GEANT4]. Supervised by Prof Ruben Saakyan.
- o **Chat-bot to Translate Text in Facebook Messenger - UCL Tech Soc Team** (ref: president@ucltechsoc.com). 2020
 - Developer Circles from Facebook AI Hackaton [Flask, PyTorch].
- o **Providing Insight from Credit Card Customer Datasets - Winning Team** (ref: su-datascience@ucl.ac.uk). 2019
 - UCL Data Science Society Hackathon hosted by Microsoft & American Express [Scikit-Learn, Azure API].
- o **Adaptive Image Filter - Winning Team** (ref: shoko.ueda@arm.com). 2019
 - Applied ML Insight Challenge at Arm Holdings [Tensorflow].
- o **Cellular Automata Model to Simulate Motorway Traffic Flow.** 2019
 - Computational Physics Report [Python]. Supervised by Prof David Bowler

Work Experience

FTI Consulting

Aldersgate St, City of London

Data Science & Analytics Summer Intern (ref: kyle.johnson@fticonsulting.com)

July 2019 – August 2019

- o 8-week summer internship in which I used dynamic & static web-scraping, graph networks, fuzzy token matching & random forests to identify for anomalous activity indicating fraud & money-laundering. [Python, Neo4j, SQL].

Non-Technical Roles

Pembroke College Graduate Parlour

Pembroke College, Cambridge

President (ref: gp@pem.cam.ac.uk)

June 2021 – Present

- o Elected to lead the committee of 12 members & sit on committee meetings with senior college fellows to shape the college experience for graduate students, current. Previously **Events Officer** (Oct 2020 – June 2021).

University of London Halls

Lillian-Penson Hall, Tyburnia & International Hall, Bloomsbury

Resident Advisor (ref: Dr Derrick Chong)

August 2019 – August 2020

- o Responsibilities included promoting & monitoring residents' personal, mental & social welfare, other pastoral care both throughout the academic year as well as the COVID pandemic, dealing with disciplinary issues & conflict resolution as well as being in charge of organising the social life of the Hall & managing the Lillian-Penson JCR.
- o Previously **Events Officer Nutford House JCR**, University of London (Sept 2017 - June 2018).

Department of Physics & Astronomy

University College London, Bloomsbury

Academic Mentor (ref: a.owusu@ucl.ac.uk)

September 2018 – December 2018

- o Provided guidance to 10 first year students by running weekly sessions to aid in their adaptation to university & the degree.