

Akbir Khan

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Education	Sidney Sussex College, University of Cambridge, UK MPhil in Advanced Computer Science Advised by Prof. Hatice Gunes and Jack Hopkins (Natural Language Processing and Affective Computing)	2017-2018 Distinction
	University College London, UK MSci in Mathematics and Physics Advised by Prof. Stephen Bramwell (Thermodynamics and Analytic Magnetic Systems)	2013-2017 1 st Class Honours
	University of Toronto, Canada Visiting Student in Mathematics and Computer Science	2015-2016 GPA: 3.3/4.0
Publications	Considering Race as a Problem of Transfer Learning Akbir Khan, Marwa Mahmoud. In <i>Proceedings of the 2019 IEEE Winter Applications of Computer Vision Workshop: Demographic Variations in Performance of Biometric Algorithms (oral presentation)</i> DOI: 10.1109/WACVW.2019.00022	
	Detecting Anomalous Application Messages In Telecommunication Networks Dishant Shah, Jack Hopkins, Akbir Khan, Javid Lakha. Patent accepted at <i>World Intellectual Property Organisation under the Patent Cooperation Treaty</i> Publication Number: WO2019053234	
Experience	Spherical Defence - AI/Cyber Security Lab <i>Chief Research Officer</i> Manage a team of (5+) research engineers, developing intellectual property Employee #1, raised a \$2 million seed and built an ML based Web Application Firewall Researched novel deep learning autoencoders to encode tree-structured data Developed Python service for training/inference models in scalable cloud deployments	Jun. 2017 - Present
	Deutsche Bank <i>Software Engineer/Business Analyst</i> Created front-end (Javascript) for internal search engine of market data Implemented MIFIDii regulation (€100m budget) at cross-divisional and global scale Designed project milestones and tracking metrics, to be used by all (300) projects	Jun. 2016 - Aug. 2016
	Imperial College London <i>Research Assistant</i> Worked with Prof. David Jennings in the Quantum Optics and Laser Group. Applied information theory to validate restrictions within quantum communication protocols	Jun. 2014 - Aug. 2014
Technical Skills	Languages: Golang, Python [PyTorch, JAX (<i>contributor</i>), Scikit-learn, Haiku] Graduate Courses: Probabilistic ML, Computer Vision, Entanglement Physics, Deep Learning for NLP, Quantum Computation & Communication	
Projects	Deep Equilibrium Model [akbir/deq-jax] JAX + Haiku implementation of an implicit-depth architecture that solves and back-propagates through the equilibrium state of an (effectively) infinitely deep network	
	Bad Flamingo [jayelm/bad-flamingo] Gamified data collection of adversarial machine learning examples of sketched images Awarded 1 st Prize at the University of Cambridge Ternary Hackathon	
Awards	Provost Excellence Scholarship - UCL Berkley Exhibition Scholar - Grammar School at Leeds	
Extra Curricular	Debating: Finalist at Warwick 2015 and Yale 2016 inter-varsity competitions Charity: DebateMate - mentoring children in areas of poverty through debate Sports: Member of the Sidney Sussex College mens rowing 2 nd team	