Anupama Unnikrishnan

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Education

University of Oxford   *Oxford, UK*
DPHIL (PHD) PHYSICS, QUANTUM INFORMATION AND CRYPTOGRAPHY   *10.2015 - 12.2019*
- **PhD thesis**: Building secure protocols for quantum networks
- **Supervisors**: Vlatko Vedral, Damian Markham
- **Collaboration**: Laboratoire d'Informatique de Paris 6, Sorbonne Université, Paris, France
- **Prizes**: Trinity College Graduate Prize

University of Leeds   *Leeds, UK*
MPHYS + BSC PHYSICS (INTERNATIONAL), 1ST CLASS (HONS)   *09.2011 - 07.2015*
- **Masters thesis**: Computational hacking of classical post-processing in quantum key distribution
- **Year abroad**: University of California, Santa Cruz
- **Prizes**: Brotherton Science Scholarship, Best Second Year Student, Scriven Bolton Prize in Astronomy

Experience

Recurse Center   *New York City, USA*
- Self-directed programming projects in AI, machine learning, data analysis, web development and more   *02.2020 - current*
- Built maze solver using reinforcement learning, minimax-based game AI, NLP movie plot generator,
  neural network from scratch, Lisp interpreter, Scrabble AI, hike recommendation web app, among other projects
- Took courses and read books on algorithms, reinforcement learning, neural networks, deep learning, game theory, Lisp

University of California, Los Angeles   *Los Angeles, USA*
- Applied mathematics research for Walt Disney Animation Studios on efficient computational simulation of fluids   *06.2014 - 08.2014*

University of California, Santa Cruz   *Santa Cruz, USA*
- Astrophysics research on extra-solar planet detection using data from the NASA Kepler telescope   *01.2014 - 06.2014*
- Neuroscience research on analysing receptive fields in mice

University of Münster   *Münster, Germany*
- Theoretical particle physics research on dark matter using computational methods and Monte-Carlo Markov chains   *06.2013 - 07.2013*

Coding

Languages
Python, C++, C, Javascript, Scheme, Matlab,
Wolfram Mathematica, HTML, CSS, Bash

Libraries and frameworks
TensorFlow, Keras, Scikit-learn, Textgenrnn, NumPy, Pandas,
Matplotlib, BeautifulSoup, D3.js, Flask, Multiprocessing

Publications

Anonymity for practical quantum networks
A. Unnikrishnan, I. J. MacFarlane, R. Yi, E. Diamanti,
D. Markham, I. Kerenidis
Physical Review Letters 122, 240501

Verification of graph states in an untrusted network
A. Unnikrishnan, D. Markham
arXiv:2007.13126

Authenticated teleportation with one-sided trust
A. Unnikrishnan, D. Markham
Physical Review A 100, 032314

**Authenticated teleportation and verification
in a noisy network**
A. Unnikrishnan, D. Markham
arXiv:1911.07000

Talks

EnthusiastiCon   *Remote* 2020
Conference on Quantum Information and Quantum Control   *Toronto, Canada* 2019
Quantum Internet Alliance Consortium Meeting   *Lisbon, Portugal* 2019
Conference of the European Flagship for Quantum Technologies   *Grenoble, France* 2019
Conference on Quantum Structures and Quantum Information Theory   *Cagliari, Italy* 2018
Workshop at the Centre for Quantum Technologies   *Singapore* 2016

Skills

Languages
English (fluent)
Malayalam (fluent)
French (intermediate)

Leadership roles
Events Coordinator, Oxford Women in Physics Society, *2017 - 2018*
Social Secretary, Trinity College, University of Oxford, *2016 - 2017*
Intercultural Ambassador and Peer Mentor, University of Leeds, *2012 - 2013*