

Shyam A. Tailor

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Education

University of Cambridge

PhD in Computer Science

October 2019 – Present

- Second year student in the Machine Learning Systems group; supervised by Dr Nicholas Lane.
- Interested in techniques for **efficient on-device machine learning applications** through hardware-software co-design. Particular interest in graph neural networks (GNNs), including applications to problems such as computer vision and system optimisation.
- **Papers accepted to HotMobile, ICML GNN Workshop and ICLR**. First year spent at the University of Oxford (until September 2020) before research group moved to Cambridge.

Skills: Machine Learning Edge Compute Graph Neural Networks Computer Vision Python C++ PyTorch

University of Cambridge

MEng Computer Science

October 2018 – June 2019

- **Distinction (rank 2/16, 87%)**. Specialised in cyber-physical systems and machine learning.
- Dissertation: “*Continuous Auscultation in the Wild*”. Supervised by Prof Cecilia Mascolo.
- Work from dissertation continued by Prof Mascolo’s group; won **highly commended prize** from Cambridge department and **best paper award** at WellComp workshop at UbiComp 2020.

Skills: Machine Learning Cyber-Physical Systems Wearables Audio Analysis Python C++

University of Cambridge

BA Computer Science

October 2015 – June 2018

- **1st class honours (rank 3/98, 84%)**. 1st class achieved every year of degree.
- Dissertation: “*Anonymous Proximity Beacons from Smartphones*”. Supervised by Dr Robert Harle.
- Investigated anonymous human proximity detection using Bluetooth-enabled Android smartphones. **Similar approaches now used for COVID-19 contact tracing**. Results from dissertation published at PerCom 2018.

Skills: Smartphones Android Bluetooth Java SQL Bash Git Unix Tools

Work Experience

Facebook

Software Engineering Intern

June 2018 – September 2018

- On Workplace product team and built REST APIs and bot functionality at core of product offering.
- Worked primarily with Hack (Facebook’s fork of PHP) on backend infrastructure.

Skills: Hack PHP REST Backend

Ensoft

Software Engineering Intern

July 2017 – September 2017

- Wrote an automated regression testing tool to verify a system re-implementation over billions of possible inputs.
- Written in Python and utilised an SMT solver to generate test cases.

Skills: Python Automated Testing SMT Solvers Infrastructure Linux Docker

Selected Publications

- [1] Shyam A. Taylor, Javier Fernandez-Marques, and Nicholas D. Lane. “Degree-Quant: Quantization-Aware Training for Graph Neural Networks”. In: *International Conference on Learning Representations (ICLR) 2021*. Also at ICML Graph Representation Learning and Beyond Workshop 2020.
- [2] Shyam A. Taylor, Jagmohan Chauhan, and Cecilia Mascolo. “A first step towards on-device monitoring of body sounds in the wild”. In: *WellComp Workshop, UbiComp/ISWC 2020. Best Paper*.
- [3] Catherine Tong, Shyam A. Taylor, and Nicholas D. Lane. “Are Accelerometers for Activity Recognition a Dead-end?” In: *HotMobile 2020*.
- [4] Shyam A. Taylor. “Continuous Auscultation in the Wild”. Master’s Dissertation, **Highly Commended**. 2019.
- [5] Shyam A. Taylor. “Anonymous Proximity Beacons from Smartphones”. Bachelor’s Dissertation. 2018.
- [6] Augustin Zidek, Shyam Taylor, and Robert Harle. “Bellrock: Anonymous proximity beacons from personal devices”. In: *International Conference on Pervasive Computing and Communications (PerCom)*. 2018.

Leadership

Magdalen College, University of Oxford Social Secretary

January 2020 — September 2020

- Oversaw the organisation of social events for 200 graduate students in the college.
- Typically organised 2 social events per week, frequently in collaboration with other colleges. Role continued during pandemic with online events.

Hack Cambridge Sponsorship Team

July 2017 — October 2018

- Cambridge’s main annual student hackathon with approximately 400 attendees per year.
- Personally negotiated over £12,000 worth of sponsorship deals for the 2018 event.

Teaching and Service

- Supervisor — Algorithms, University of Cambridge (February — March 2021)
- Undergraduate Admissions Interviewer — Downing & Fitzwilliam Colleges, University of Cambridge (December 2020)
- Supervisor — Computer Design, University of Cambridge (November 2020 — February 2021)
- Supervisor — Programming in C and C++, University of Cambridge (October — November 2020)
- Reviewer — IMWUT / UbiComp 2020.
- Class Tutor — Computer Architecture, University of Oxford (January — March 2020)

Awards and Honours

- Best Paper — WellComp 2020
- John Maheswaran Prize for Highly Commended Part III (MEng) Project — Department of Computer Science and Technology, University of Cambridge (June 2019)
- Foundation Scholarship — Downing College, University of Cambridge (June 2019)
- Huawei Studentship — University of Cambridge (May 2019, declined)
- EPSRC Excellence Award — University of Oxford (March 2019)
- EPSRC Doctoral Training Partnership Scholarship — University of Oxford (March 2019, withdrawn in favour of more prestigious EPSRC Excellence Award)
- Alcan Prize for most successful undergraduate in their penultimate year (physical and applied sciences) — Downing College, University of Cambridge (June 2018)
- Scholarship — Downing College, University of Cambridge (June 2016, 2017 and 2018)