

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 operating on non-uniformly structured data**. Particular interest in graph neural networks (GNNs), including applications to problems such as computer vision and system optimisation.
- **Full papers at HotMobile and ICLR; workshop papers at MLSys, ICML and ICLR**. First year spent at University of Oxford (until September 2020) before research group move.

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; investigated wearable devices that listen to the body in real-time for health applications. Awarded **best paper** 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 proximity detection using Bluetooth-enabled smartphones. **Similar approaches used for COVID-19 contact tracing**. Results **published at PerCom 2018**.

Skills: Smartphones Android Bluetooth Java SQL Bash Git Unix Tools

Work Experience

ARM

Research Intern

May 2021 – August 2021

- Investigating techniques to optimize models operating on point cloud data.
- Working with Partha Maji and Tiago Azevedo on the Machine Learning Research team.

Skills: PyTorch TensorFlow Lite Point Cloud Model Optimization Computer Vision

Facebook

Software Engineering Intern

June 2018 – September 2018

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

Skills: Hack PHP REST Backend API Design

Ensoft

Software Engineering Intern

July 2017 – September 2017

- Wrote an automated regression testing tool to verify that a system re-implementation matched the original system 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

- [ICLRW 21] Shyam A. Taylor et al. “Adaptive Filters and Aggregator Fusion for Efficient Graph Convolutions”. In: *GNNSys Workshop, MLSys 2021 and Hardware-Aware Efficient Training Workshop, ICLR 2021*.
- [ICLR 21] 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*.
- [UbiCompW 20] 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 2020*. **Best Paper**.
- [HotMobile 20] Catherine Tong, Shyam A. Taylor, and Nicholas D. Lane. “Are Accelerometers for Activity Recognition a Dead-end?” In: *HotMobile 2020*.
- [Thesis 19] Shyam A. Taylor. “Continuous Auscultation in the Wild”. Master’s Dissertation, **Highly Commended**. 2019.
- [PerCom 18] 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

Clare Hall, University of Cambridge

External Officer for Graduate Student Body

October 2020 – Present

- Oversee the organisation of social events in collaboration with other colleges in the university.
- Typically organize 1 event per week for the 150 graduate students in the college.

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

- Reviewer – IMWUT / UbiComp 2020/2021, ICML 2021, NeurIPS 2021.
- Supervisor – Algorithms, Computer Design, and Programming C & C++ at University of Cambridge (2020 – present)
- Undergraduate Admissions Interviewer – Downing & Fitzwilliam Colleges, University of Cambridge (December 2020)
- Class Tutor – Computer Architecture at 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 favor 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)