Catherine Tong

CONTACT INFORMATION	Wolfson Building Department of Computer Science University of Oxford Oxford, UK OX1 3QD	Mobile: +44 7984340665 E-mail: egctong@gmail.com Webpage: egctong.github.io

RESEARCH INTERESTS

Areas: ubiquitous health monitoring, wearable cameras, machine learning for healthcare, multimodal learning. My current research focuses on developing machine learning methods for modelling complex human behaviours and problems in healthcare. I am particular interested in developing versatile and robust methods which can leverage multi-modalities and domain knowledge.

EDUCATION

Computer Science, University of Oxford   2017 - 2021 (expected)
Doctor of Philosophy (DPhil)
- Theme: Machine Learning on Human Behavioural Data
- Supervised by Associate Prof. Nicholas D. Lane

Physics, University of Oxford   2013 - 2017
Master of Physics, First Class Honours
- Major Options: Theoretical Physics, Atmospheric Physics
- Thesis: *Stochastic Labour Flows in Multiplex Networks*
- Other project: *Photometric and Evolutionary Analysis of Eclipsing Binary RCMa*

AWARDS

ACM SIGCHI Travel Award	2018
EPSRC DPhil (PhD) Scholarship	2017-2021
Examiners' Commendation for Best Practical Work in Physics	2016
College Scholarship for Outstanding Performance in Physics Exams	2013-2017

PUBLICATIONS

C. Tong, S. A. Tailor, ND. Lane. **Are Accelerometers for Activity Recognition a Dead-end?** The 21st International Workshop on Mobile Computing Systems and Applications (Hotmobile '20), 2020

C. Tong, M. Craner, M. Vegreville, ND. Lane. **Tracking Fatigue and Health State in Multiple Sclerosis Patients Using Connected Wellness Devices.** Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 3 Issue 3. Also in Ubicomp '19 and MobiUK '19, 2019

V. Tseng, S. Bhattacharya, J. Fernández Marqués, M. Alizadeh, **C. Tong**, ND. Lane. **Deterministic Binary Filters for Convolutional Neural Networks.** The 27th International Joint Conference on Artificial Intelligence (IJCAI '18), 2018

V. Radu, **C. Tong**, S. Bhattacharya, ND. Lane, C. Mascolo, MK. Marina, F. Kawsar, 2017. **Multimodal Deep Learning for Activity and Context Recognition.** Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 1 Issue 4. Also in Ubicomp '18 and MobiUK '18, 2018

C. Tong, O. Guerrero, E. Lopez, F. Reed-Tsochas, 2017. **Diffusing Workers in a Multiplex World.** Preprint at SSRN:3056730, 2017

Poster: Inference of Big-Five Personality Using Large-scale Networked Mobile and Appliance Data. C. Tong, GM. Harrari, A. Chieh, O. Bellahsen, M. Vegreville, E. Roitmann, ND. Lane. The 15th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys '18), 2018

WORK EXPERIENCE	**Microsoft Research Cambridge,** Research Intern Cambridge, UK, 06-09/2019 • Conducted research on machine learning in healthcare.

	Nokia Bell Labs, Research Assistant Cambridge, UK, 07-09/2017
	  • Trained neural networks for analyzing daily human behavioural data collected with smart mobile and home appliances;
	  • Analyzed the use of different multimodal deep learning models for activity and context recognition.

	University of Oxford, Research Assistant Oxford, UK, 05-07/2017
	Saïd Business School | Centre for Complex Agent-Based Dynamic Networks (CABDyN)
	  • Formulated and solved an agent-based Markov model on multiplex networks to describe the movement of labour across the economy;
	  • Data analysis and model implementation on UK labour survey data.

	Mercer, Consultant Intern London, 06-08/2015 • Quantitative analysis of employee benefits schemes for multinational companies.

SELECTED ACTIVITIES	Membership Co-chair, N2Women Board	2019 - present
	Industry Events Organizer, Oxford Women in CS Society,	2019 - present
	Teaching Assistant, *Foundamentals of Sensing* (for PhD students)	2020
	Organizer, Oxford Women in CS Distinguished Speakers Seminar Series,	2017 - 2019
	Co-organizer, the 1st Oxford Emerging Tech Party	2018
	Undergraduate Mentor, Oxford Women in Physics Society	2014 -2017
	Volunteer Tutor, Jacari (providing free home tutoring to children)	2014-2015
	Private Tutor in Mathematics and Physics	2011 - present

RELEVANT SKILLS	• Proficient in Python, PyTorch, TensorFlow, Keras, LaTeX, git • Experienced in MATLAB, SQL, JavaScript, HTML

ACADEMIC REFERENCES	**Nicholas Lane** (nicholas.lane@cs.ox.ac.uk) Associate Professor, Computer Science, University of Oxford
	Joseph Conlon (joseph.conlon@physics.ox.ac.uk) Professor, Theoretical Physics, University of Oxford
	Eduardo Lopez (elopez22@gmu.edu) Assistant Professor, Computational and Data Sciences, George Mason University