

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
RESEARCH INTERESTS	<p><i>Areas:</i> ubiquitous health monitoring, machine learning on graphs, embedding learning of large datasets, multimodal learning.</p> <p>My current research focuses on developing machine learning models useful for health data analysis. I am interested in using ubiquitous sensing to find connections between people's daily behaviour and health outcomes. In particular, I seek to develop methods which can leverage other resources, including large-scale health records, multimodal sensor streams and graphs (e.g. knowledge graphs and social networks), to overcome the poor data scenarios often resulted from in-the-wild data collection.</p>	
EDUCATION	<p>Computer Science, University of Oxford 2017 - 2021 (expected) <i>Doctor of Philosophy (DPhil), Machine Learning with Healthcare Applications</i></p> <ul style="list-style-type: none">• Supervised by Associate Prof. Nicholas D. Lane <p>Physics, University of Oxford 2013 - 2017 <i>Master of Physics, First Class Honours</i></p> <ul style="list-style-type: none">• Major Options: Theoretical Physics, Atmospheric Physics• Thesis: <i>Labour Flows on Multiplex Networks</i>• Other project: <i>Photometric and Evolutionary Analysis of Eclipsing Binary RCMA</i>	
AWARDS	Travel Award by the ACM Special Interest Group on Computer-Human Interaction (SIGCHI) 2018 Examiners' Commendation for Best Practical Work in Physics 2016 College Scholarship for Outstanding Performance in Physics Exams 2013-2017	
PUBLICATIONS	<p>[Under Review] Tracking Fatigue and Health State in Multiple Sclerosis Patients Using Ubiquitous Sensing. C. Tong, M. Craner, A. Chieh, O. Bellahsen, M. Vegreville, E. Roitmann, ND. Lane, 2018.</p> <p>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, 2018. <i>The 15th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys '18)</i></p> <p>Deterministic Binary Filters for Convolutional Neural Networks. V. Tseng, S. Bhattacharya, J. Fernández Marqués, M. Alizadeh, C. Tong, ND. Lane, 2018. <i>The 27th International Joint Conference on Artificial Intelligence (IJCAI '18)</i></p> <p>Multimodal Deep Learning for Activity and Context Recognition. V. Radu, C. Tong, S. Bhattacharya, ND. Lane, C. Mascolo, MK. Marina, F. Kawsar, 2017. <i>Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 1 Issue 4.</i> Also in <i>Ubicomp '18</i> and <i>MobiUK '18</i>.</p> <p>Diffusing Workers in a Multiplex World. C. Tong, O. Guerrero, E. Lopez, F. Reed-Tsochas, 2017. <i>Preprint at SSRN:3056730.</i></p>	

WORK EXPERIENCE	Nokia Bell Labs , Research Assistant Cambridge, 06-09/2017	
	<ul style="list-style-type: none"> • 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, 06-09/2017	
	Saïd Business School Centre for Complex Agent-Based Dynamic Networks (CABDyN) <ul style="list-style-type: none"> • Formulated and solved a 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	
	<ul style="list-style-type: none"> • Analysis of employee insurance benefits of multinational companies 	
	Poba Software , Project Management Intern Beijing, 06-07/2014	
SELECTED ACTIVITIES	Seminar Coordinator at Oxford Women in Computer Science Society 2017 - present	
	Co-organizer of the 1st Oxford Emerging Tech Party 2018	
	Mentor at the Oxford Women in Physics Society 2014 -2017	
	Volunteer Tutor at Jacari (providing free home tutoring to children) 2014-2015	
	Private Tutor in Mathematics and Physics 2011 - present	
RELEVANT SKILLS	<ul style="list-style-type: none"> • Proficient in Python (including networkx), TensorFlow, L^AT_EX, git • Experienced in MATLAB, SQL, Keras, vim 	
ACADEMIC REFERENCES	Nic Lane (nicholas.lane@cs.ox.ac.uk) Associate Professor, Computer Science, University of Oxford Eduardo Lopez (elopez22@gmu.edu) Assistant Professor, Computational and Data Sciences, George Mason University Joseph Conlon (joseph.conlon@physics.ox.ac.uk) Professor, Theoretical Physics, University of Oxford	