

## Catherine Tong

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CONTACT INFORMATION	Wolfson Building Department of Computer Science University of Oxford Oxford, UK OX1 3QD	Mobile: +44 7984340665 E-mail: <a href="mailto:egctong@gmail.com">egctong@gmail.com</a>
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><b>Computer Science</b>, University of Oxford 2017 - 2021 (expected) <i>Doctor of Philosophy (DPhil), Machine Learning with Healthcare Applications</i> • Supervised by Associate Prof. Nicholas D. Lane</p> <p><b>Physics</b>, University of Oxford 2013 - 2017 <i>Master of Physics, First Class Honours</i> • 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></p>	
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] <b>Tracking Fatigue and Health State in Multiple Sclerosis Patients Using Ubiquitous Sensing.</b> C. Tong, M. Craner, A. Chieh, O. Bellahsen, M. Vegreville, E. Roitmann, ND. Lane, 2018.</p> <p><b>Poster: Inference of Big-Five Personality Using Large-scale Networked Mobile and Appliance Data.</b> 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><b>Deterministic Binary Filters for Convolutional Neural Networks.</b> 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><b>Multimodal Deep Learning for Activity and Context Recognition.</b> 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><b>Diffusing Workers in a Multiplex World.</b> C. Tong, O. Guerrero, E. Lopez, F. Reed-Tsochas, 2017. <i>Preprint at SSRN:3056730.</i></p>	

WORK EXPERIENCE	<b>Nokia Bell Labs</b> , Research Assistant Cambridge, 06-09/2017	
	<ul style="list-style-type: none"> <li>• Trained neural networks for analyzing daily human behavioural data collected with smart mobile and home appliances;</li> <li>• Analyzed the use of different multimodal deep learning models for activity and context recognition.</li> </ul>	
	<b>University of Oxford</b> , Research Assistant Oxford, 06-09/2017	
	Saïd Business School   Centre for Complex Agent-Based Dynamic Networks (CABDyN) <ul style="list-style-type: none"> <li>• Formulated and solved a Markov model on multiplex networks to describe the movement of labour across the economy;</li> <li>• Data analysis and model implementation on UK labour survey data.</li> </ul>	
	<b>Mercer</b> , Consultant Intern London, 06-08/2015	
	<ul style="list-style-type: none"> <li>• Analysis of employee insurance benefits of multinational companies</li> </ul>	
	<b>Poba Software</b> , Project Management Intern Beijing, 06-07/2014	
	<ul style="list-style-type: none"> <li>• Supported in the conception and control of an Office Automation System project</li> </ul>	
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"> <li>• Proficient in Python (including networkx), TensorFlow, L<sup>A</sup>T<sub>E</sub>X, git</li> <li>• Experienced in MATLAB, SQL, Keras, vim</li> </ul>	
ACADEMIC REFERENCES	<b>Nic Lane</b> ( <a href="mailto:nicholas.lane@cs.ox.ac.uk">nicholas.lane@cs.ox.ac.uk</a> )	
	Associate Professor, Computer Science, University of Oxford	
	<b>Eduardo Lopez</b> ( <a href="mailto:elopez22@gmu.edu">elopez22@gmu.edu</a> )	
	Assistant Professor, Computational and Data Sciences, George Mason University	
	<b>Joseph Conlon</b> ( <a href="mailto:joseph.conlon@physics.ox.ac.uk">joseph.conlon@physics.ox.ac.uk</a> )	
	Professor, Theoretical Physics, University of Oxford	