

# Emma Rocheteau

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## PERSONAL PROFILE

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I am a PhD Student in Machine Learning for Healthcare. I studied medicine before intercalating in 3rd year engineering and starting my PhD, so I have an unusual skill set.

## EDUCATION

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Current (expected 2021)	<b>Doctor of Philosophy</b> , University of Cambridge <i>Department of Computer Science and Technology</i> Machine Learning for Healthcare, supervised by Prof. Pietro Liò
Current (expected 2023)	<b>M.B. B.Chir</b> , University of Cambridge Completed Final MB Part I (4th Year Medicine), on hold until 2021
JUNE 2016	<b>Bachelor of Arts</b> , University of Cambridge Part IIA Engineering CLASS I (16th percentile) Part IB Medical and Veterinary Sciences CLASS I (12th percentile) Part IA Medical and Veterinary Sciences CLASS I (7th percentile)
AUG. 2013	<b>A levels</b> , The Crossley Heath School, Halifax, UK 6 A*s Maths, Further Maths, Physics, Biology, Chemistry & General Studies

## PEER REVIEWED PAPERS & EXTENDED ABSTRACTS

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APR. 2021	<b>E. Rocheteau</b> , P. Liò, S. Hyland. “ <a href="#">Temporal pointwise convolutional networks for length of stay prediction in the intensive care unit</a> ”. <i>Proceedings of the Conference on Health, Informatics and Learning (ACM CHIL '21)</i>
FEB. 2021	<b>E. Rocheteau*</b> , C. Tong*, P. Velickovic, N. Lane, P. Liò. “ <a href="#">Predicting Patient Outcomes with Graph Representation Learning</a> ”. <i>Deep Learning on Graphs (DLG-AAAI'21) &amp; Health Intelligence (W3PHIAI-21) workshops at AAAI</i> . ArXiv: 2101.03940
DEC. 2020	<b>E. Rocheteau</b> , P. Liò, S. Hyland. “ <a href="#">Predicting Length of Stay in the Intensive Care Unit with Temporal Pointwise Convolutional Networks</a> ”. <i>Machine Learning for Health (ML4H) at NeurIPS (Extended Abstract)</i> . ArXiv: 2006.16109 Also accepted for spotlight oral presentation at the Healthcare Systems, Population Health, and the Role of Health-Tech (HSYS) Workshop at ICML 2020
DEC. 2020	<b>E. Rocheteau*</b> , D. Kim*. “ <a href="#">Deep Transfer Learning for Automated Diagnosis of Skin Lesions from Photographs</a> ”. <i>Machine Learning for Mobile Health Workshop at NeurIPS</i> . ArXiv: 2011.04475
DEC. 2020	<b>E. Rocheteau*</b> , J. Deasy*, K. Kohler, D. Stubbs, P. Barbiero, P. Liò, A. Ercole. “ <a href="#">Rapid Design and Implementation of a Data-Driven Forecast of ICU Strain from COVID-19 for Early Surge Planning in England</a> ”. <i>ESICM LIVES Digital</i>
SEPT. 2017	<b>E. Rocheteau</b> “ <a href="#">How to organise a summer research placement</a> ” <i>Student BMJ</i> (2017) DOI: 10.1136/sbmj.j2888
JULY 2017	<b>E. Rocheteau</b> “ <a href="#">What will British healthcare look like in 20 years' time?</a> ” <i>Cambridge Medicine Journal</i> 1-2 (2017) DOI: 10.7244/cmj.2017.07.003

## OTHER CONFERENCE PRESENTATIONS

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AUG. 2020	<b>E. Rocheteau</b> , J. Deasy, L. Roggeveen, A. Ercole. <i>ICUnity: A software tool to harmonise the MIMIC-III and AmsterdamUMCdb databases</i> . Machine Learning for Healthcare, Clinical Abstracts Track. Virtual Meeting
DEC. 2018	R. Samanta, <b>E. Rocheteau</b> , O. Oloyede, S. Morini, C. Summers. <i>Decanting the Salt from the (Data) Swamp</i> . SOA18, London
APR. 2018	<b>E. Rocheteau</b> , K. Leung, K. Joshi, D. Bloxham, B. Manasse, A. Hodson, M. Prahlanan. <i>Acute Megakaryocytic Leukaemia Presenting with Osteolytic Lesions, Hypercalcaemia and Acute Renal Failure</i> . British Society for Haematology 2018, Liverpool
FEB. 2018	<b>E. Rocheteau</b> , P. Liò. <i>Predicting outcomes in psychiatric disorders using automated reinforcement learning analysis of Electronic Health Records</i> . 2nd Human Brain Project Student Conference, Ljubljana, Slovenia
SEPT. 2016	A. Hammond-Kenny, <b>E. Rocheteau</b> , N. Wilkinson, V. M. Bajo, A. J. King & F. R. Nodal. <i>Neural correlates of multisensory behavior in the auditory cortex</i> . Basic Auditory Science, Cambridge
JULY 2016	<b>E. Rocheteau</b> , J. A. Fraser. <i>The effect of heart rate on action potential shape and conduction velocity in normal, hypo-perfused and <math>\Delta</math>KPQ-Scn5a murine atria</i> . Physiology 2016, Dublin, Ireland

## REVIEWING

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APR. 2021	Machine Learning for Healthcare Conference (MLHC)
MAR. 2021	Machine Learning for Preventing and Combating Pandemics (MLPCP) Workshop at ICLR
NOV. 2020	Trustworthy AI for Healthcare (TAIH) Workshop at AAAI
OCT. 2020	AMIA Informatics Summit
OCT. 2020	Machine Learning for Health (ML4H) Workshop at NeurIPS*
	*My ML4H reviews were explicitly recognised as excellent by metareviewers
JUNE 2020	Graph Representation Learning and Beyond (GRL+) Workshop at ICML
SEPT. 2019	Graph Representation Learning (GRL) Workshop at NeurIPS
SEPT. 2019	Machine Learning for Health (ML4H) Workshop at NeurIPS

## WORK EXPERIENCE

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SUMMER 2019	<b>Research Intern, Microsoft Research, Cambridge</b> 13-week research internship with the Healthcare Intelligence Team. Submission in development for MLHC 2020
SUMMER 2018	<b>Data Science Intern, Featurespace, Cambridge</b> 8-week Python project involving feature engineering from mouse/keyboard data; used to identify financial fraud using a random forest classifier.
SUMMER 2016	<b>Research Student, University of Oxford</b> 11-week MATLAB project analysing Local Field Potential data recorded from ferret auditory cortices while they did a behavioural task.
SUMMER 2015	<b>Research Student, University of Cambridge</b> 8-week experimental project in cardiovascular science.

## SELECTED AWARDS AND PRIZES

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FEB. 2021	2nd Runner-Up for Best Short Paper Award, W3PHIAI Workshop at AAAI
DEC. 2020	Best Talk Prize, Oxbridge Women in Computer Science Conference
FEB. 2018	Best Poster Prize (49 submissions), 2nd HBP Student Conference
NOV. 2017	AC Comfort Essay Prize, Royal Society of Medicine
JUNE 2017	Cambridge Medical Journal Essay Competition, 1st Prize
NOV. 2016	3rd Year Computer-Based Project Prize, Department of Engineering
JULY 2016	Gold Rob Clarke Award for Undergraduate Research in Physiology
MAY 2016	French CEFR Level B2 (approximately equivalent to A Level): MERIT
2014/15/16	Churchill College Medical and Veterinary Prize
FEB. 2013	Gold Award in the British Biology Olympiad, Royal Society of Biology
JAN. 2013	Gold Award in the British Chemistry Olympiad, Royal Society of Chemistry
NOV. 2012	Gold Award (& top 100) in the British Physics Olympiad, University of Oxford

## ACADEMIC TEACHING

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JAN. 2017 - PRESENT	Supervisor of Physiology, 1st year medical students, Cambridge
OCT. 2019 - JUNE 2020	MPhil Project Supervisor (Advanced Computer Science), Cambridge Can Graph Neural Networks Learn Spatial Chemistry?
OCT. 2018 - JUNE 2019	Part II Project Supervisor (Computer Science Tripos), Cambridge Using Reinforcement Learning for Finding Optimal Sepsis Treatment

## HACKATHONS

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JAN. 2020	Milan Critical Care Datathon	N/A
JAN. 2019	Hack Cambridge 4D	3rd Place (73 submissions)
SEPT. 2018	AIMed Critical Care Datathon	1st Place (~15 submissions)
MAR. 2018	Santander Hackathon	2nd Place (~15 submissions)
FEB. 2018	HackCity	1st Place (28 submissions)
FEB. 2018	CEMEX Hackathon	2nd Place (13 submissions)
NOV. 2017	HackKings	1st Place (19 submissions)
SEPT. 2017	TADHack	Joint 1st Place & Vidyo Sponsor Prize (~10 submissions)
JULY 2017	NHS Hack Day	3rd Place (~15 submissions)

## OTHER

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JAN. 2021	Mediterranean Machine Learning School (M2L)
AUG. 2020 - PRESENT	Competitive school designed for PhD students and postdocs. Academic Director of the Institute for Medical AI Institute dedicated to advancing patient-centered care with medical AI..
AUG. 2020	Oxford Machine Learning Summer School (OxML)
SPRING 2018	Competitive school designed for PhD students and postdocs. 12.5% acceptance. Technology iTeams (now Innovation iTeams) This is an intense 9-week program which I did alongside my PhD. In a team of 7, I conducted market research for a startup company called Voice for Good ( <a href="http://voiceforgood.org">http://voiceforgood.org</a> ). More information about the program can be found at <a href="https://iteamsonline.org/innovation-i-teams">https://iteamsonline.org/innovation-i-teams</a> .
SEPT. 2017	Data Science Study Group at The Alan Turing Institute Over 5 days, our team analysed data from Queens A&E department to predict which patients were going to be admitted

## LANGUAGES

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Proficient: Python3 (especially PyTorch, Keras, pandas & numpy), SQL, LaTeX

Competent: MATLAB, Bash