
CURRICULUM VITAE

P Chaggar

Pavanjit Chaggar

DPhil Student
Mathematical Institute
University of Oxford
pavanjit.chaggar@maths.ox.ac.uk

EDUCATION

University of Oxford, DPhil, Mathematical Institute *2019 — 2023*
Provisional Title: Data-Driven Mathematical Modelling of Neurodegeneration
Academic Advisors: Alain Goriely (primary), Saad Jbabdi
Industrial Advisors: Stefano Magon (Roche), Gregory Klein (Roche)
Funding: EPSRC CDT for Sustainable Approaches to Biomedical Sciences

University College London, M.Sc in Neuroscience *2018 — 2019*
Merit with Distinction in thesis
Thesis Advisors: Maria Chain, Karl Friston, Gareth Barnes

King's College London, B.Sc in Biomedical Sciences *2012 — 2016*
Upper Second Class Honors
Thesis Advisor: Clive Coen

TEACHING

Software Engineering *2020-2021*
Doctoral Training Center, University of Oxford
Mathematical Modelling and Scientific Computing *Feb 2021*
Doctoral Training Center, University of Oxford

JOBS

University of Cambridge, Research Assistant, Machine Learning Group *Sept 2021 — Present*
Working as a software engineer with Dr Hong Ge. I work on developing Turing a high performance probabilistic programming language written in Julia. Primarily, I have been working on developing AbstractPPL.jl, a package for defining a common API for probabilistic programming languages.

PUBLICATIONS

Amelie Schäfer, **Pavanjit Chaggar**, Alain Goriely, Ellen Kuhl, Alzheimer's Disease Neuroimaging Initiative, et al. Correlating tau pathology to brain atrophy using a physics-based bayesian model. 2021 (**Joint first author.**)
Amelie Schäfer, **Pavanjit Chaggar**, Travis B Thompson, Alain Goriely, Ellen Kuhl, Alzheimer's Disease Neuroimaging Initiative, et al. Predicting brain atrophy from tau pathology: A summary of clinical findings and their translation into personalized models. *Brain Multiphysics*, 2:100039, 2021 (**Joint first author.**)
Prana Putra, Travis B Thompson, **Pavanjit Chaggar**, and Alain Goriely. Braiding braak and braak: Staging patterns and model selection in network neurodegeneration. *Network Neuroscience*, 5(4):929–956, 2021
Travis B Thompson, **Pavanjit Chaggar**, Ellen Kuhl, Alain Goriely, Alzheimer's Disease Neuroimaging Initiative, et al. Protein-protein interactions in neurodegenerative diseases: A conspiracy theory. *PLoS computational biology*, 16(10):e1008267, 2020

CONFERENCE PRESENTATIONS

Pavanjit Chaggar. Mathematical modelling of alzheimer's disease. Early Career British Mathematicians' Colloquium, July 2021

Pavanjit Chaggar. Prion: Proteopathy modelling on connectomes with python. International Brain Mechanics and Trauma Workshop, April 2021

Roberta Bianco, Pavanjit Chaggar, Rosemary Southwell, Sven Bestmann, Gareth Barnes, and Maria Chait. A brain network of temporo-frontal areas supports pattern detection in rapid sound sequences. Advances and Perspectives in Auditory Neuroscience, August 2020

INVITED TALKS

Predicting patient outcomes using mathematical models of alzheimer's disease. Presented at the Clinical Biomarkers Group, Roche, December 2021

Inference methods for mathematical models of neurodegeneration. Presented at the Raj group seminar, UCSF, July 2021

Analysing ADNI sMRI and PET data with SPM. Presented at the UCL Wellcome Trust Centre for Neuroimaging Methods Seminar, July 2020

Optimising MEG source localisation of hippocampal regions. Presented at the UCL Wellcome Trust Centre for Neuroimaging MEG Seminar, July 2019