



Profile

Senior research scientist at Apple. Have developed ML models across multiple application domains. Led research team of scientists. 12+ years of post-PhD R&D experience spanning the UK (Cambridge), Germany and India. Research featured by the [BBC](#), [Wired Magazine](#), and [New Scientist](#). Have consulted for multiple start-ups.

Research

Co-authored 50+ peer-reviewed publications in academic journals, cited nearly 3000 times. [h-index of 26](#) (as of 2022). Have published research on a wide range of topics including time series analysis, deep learning, reinforcement learning, Bayesian methods, graph network analysis and probabilistic inference.

Employment

<i>Senior Machine Learning Scientist</i>	Apple, UK	2019-present
Built xgboost models for predicting customer retention, and production pipelines with Apache Spark. Developed autoencoders with CNNs and LSTMs for predicting temporal patterns in user behaviour. Applied MCMC to build interpretable RL for improving customer engagement and service revenue. Co-developed Bayesian inference framework powering App Store's product page optimisation feature. Published papers at KDD.		
<i>Assistant Professor, Team Leader</i>	University of Kent, UK	2016-2019
Led health care AI research team of 4 scientists. Delivered software for measuring biomarkers of consciousness using time series modelling and network analysis. Secured independent research funding. Published papers in high-impact journals. Research featured in a BBC Panorama special <i>The Mind Reader: Unlocking My Voice</i> .		
<i>Visiting Researcher</i>	The Alan Turing Institute, UK	2018
Developed ML models for automated diagnostics of brain states using EEG time series.		
<i>Senior Research Associate</i>	University of Cambridge, UK	2010-2016
Developed spectral coherence methods and causal models of EEG time series for predicting conscious states during anaesthesia and after severe brain injury. Research profiled in the <i>BBC</i> , <i>New Scientist</i> , <i>Scientific American</i> , <i>Der Spiegel</i> , and <i>Wired</i> . Gave public at <i>Wellcome Collection</i> and <i>New Scientist Live</i> .		
<i>Graduate Research Assistant</i>	Fraunhofer Institute, Germany	2005
Worked on an EU-funded project on QoS-aware broadband internet using resilient optical access. networks.		
<i>Graduate Research Assistant</i>	Hamburg University of Technology, Germany	2005
Developed convex optimisation and linear programming solutions for industrial applications. Published an algorithmic methodology for decentralization of real-time control systems.		
<i>Member of Technical Staff</i>	Oracle Corporation, India	2002-2004
Worked as software engineer in the <i>Oracle Reports</i> team, a part of Oracle's <i>Internet Application Server</i> platform. Build internal QA tools in Java, C++ and shell scripts.		
<i>Project Trainee</i>	Indian Institute of Science, India	2002
Implemented algorithms and user interface for the display and manipulation of image formats.		
<i>Project Trainee</i>	Centre for AI and Robotics, India	2002
Designed and implemented a prototype network intrusion and anomaly detection system in C++.		

Consulting

DataTiger (Marketing optimisation start-up acquired by Apple) 2018

Applied ensemble machine learning for predicting customer retention in online multiplayer games. Built unsupervised learning models for personalising timing of marketing communications.

Rsrchxchange (FinTech start-up) 2017

Built neural network-based NLP model for content similarity analysis of financial research reports. Developed latent factor models with Apache Spark to build financial research recommender models.

Education

PhD in Computer Science University of Kent, Canterbury, UK 2006-2009

Thesis title: *The temporal spotlight of attention: computational and electrophysiological explorations* (approved with no corrections)

MSc in Information and Communication Systems Hamburg University of Technology 2004-2006
Hamburg, Germany

Overall ECTS grade: 1.3 (Very Good; Passed with Distinction)

BEng in Computer Science and Engineering Visveswaraiah Technological University 1998-2002
Bangalore, India

Overall percentage score - 81.46% (First Class with Distinction)

Skills

- Big Data Modelling, Cloud Computing on AWS
- Parametric, Non-parametric and Bayesian Statistics
- Signal Processing and Time Series Analysis
- Graph Theory and Network Analysis
- **Tools:** *tensorflow, pytorch, pyro, scipy, pandas, pyspark*
- **Languages:** Python, MATLAB, JAVA, C++, C
- Deep Neural Networks
- Probabilistic Machine Learning
- Applied Artificial Intelligence
- Computer Networking and Security

Selected Publications

Chennu, Maher, Martin & Prabhanantham. 2022. [Dynamic Memory for Interpretable Sequential Optimisation.](#) *Workshop on Online and Adaptive Recommender Systems, ACM SIGKDD.*

Chennu, Martin, Liyanagama & Mohr. 2021. [Smooth Sequential Optimisation with Delayed Feedback.](#) *Workshop on Bayesian Causal Inference in Real-World Interactive Systems, ACM SIGKDD.*

Patlatzoglou, Wolff, Gosseries, Bonhomme, Laureys & **Chennu.** 2020. [Generalized Prediction of Unconsciousness during Propofol Anesthesia using 3D Convolutional Neural Networks.](#) *The 42nd International Conference of the IEEE Engg. and Biology Society.*

Chennu, Annen, Wannez, Thibaut et al. 2017. [Brain networks predict metabolism, diagnosis and prognosis at the bedside in disorders of consciousness.](#) *Brain*, 140(8), 2120-2132.

Chennu, Finoia, Kamau, Allanson et al. 2014. [Spectral signatures of reorganised brain networks in disorders of consciousness.](#) *PLOS Computational Biology*, 10(10), e1003887