Srivas Chennu

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Profile

Machine learning R&D team leader at Apple. Have developed ML models across multiple application domains. Led research team of scientists. 13+ years of post-PhD R&D experience spanning the US, UK, 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 4000 times. h-index of 28 (as of Oct 2023). Have published research on a wide range of topics including computational neuroscience, time series analysis, deep learning, reinforcement learning, Bayesian methods, graph network analysis and probabilistic inference.

Employment

ML Science Team Leader **Apple** 2019-present

Lead team of PhD-level scientists who personalize user experiences on the App Store. Use machine learning to power improvements in engagement, producing measurable increase in revenue. Built software for reinforcement learning. Developed Bayesian inference framework powering App Store's product page optimisation feature for AB testing. Published papers at KDD and DSAA.

Assistant Professor, Team Leader **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, enabling improved bedside evaluation of patients. Secured independent research funding. Published papers in high-impact journals. Research featured in a BBC Panorama special *The Mind Reader: Unlocking My Voice.*

Visiting Researcher **The Alan Turing Institute, UK** 2018

Developed ML models for automated diagnostics of brain states using EEG time series.

Senior Research Associate **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 *BBC*, *New Scientist*, *Scientific American*, *Der Spiegel,* and *Wired.* Gave public at *Wellcome Collection* and *New Scientist Live.*

Graduate Research Assistant **Fraunhofer Institute, Germany** 2005

Worked on an EU-funded project on QoS-aware broadband internet using resilient optical access. networks.

Graduate Research Assistant **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.

Member of Technical Staff **Oracle Corporation, India** 2002-2004

Worked as software engineer in the *Oracle Reports* team, a part of Oracle's *Internet Application Server* platform. Build internal QA tools in Java, C++ and shell scripts.

Project Trainee **Indian Institute of Science, India** 2002

Implemented algorithms and user interface for the display and manipulation of image formats.

Project Trainee **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 Hamburg, Germany 2004-2006

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

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

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