

Srivas Chennu

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Profile

I specialise in translating the latest machine learning and statistical inference methods into scalable real-world applications in industry and academia. I have 14+ years of R&D experience in the UK, Germany and India. My research has been featured by the BBC, Wired Magazine, New Scientist and Discovery Channel. I have worked as a consultant and as a software engineer.

Employment

Senior Machine Learning Scientist **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 App Store's Bayesian experimentation engine. Published papers at SIGKDD.

Assistant Professor **University of Kent, UK** 2016-2019

Led health care AI project to predict biomarkers of consciousness using time series modelling and network analysis. Secured independent research funding and managed team. 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*.

Research Assistant **Fraunhofer Institute, Germany** 2005

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

Research Assistant **Technical University of Hamburg, 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.

Research

Have co-author of 50+ peer-reviewed publications in academic journals, cited nearly 3000 times. Have a [h-index of 26](#) (as of 2022). Have published research on a wide range of topics including deep learning, reinforcement learning, computational neuroscience and Bayesian inference.

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, Machine Learning
- 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
- Applied Artificial Intelligence
- Computer Networking and Security
- Operating Systems

Selected Publications

Chennu, Martin, Liyanagama, Mohr. 2021. Smooth Sequential Optimisation with Delayed Feedback. *Workshop on Bayesian Causal Inference in Real-World Interactive Systems, 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, Noreika, Gueorguiev, Shtyrov, Bekinshtein & Henson. 2016. Silent Expectations: Dynamic Causal Modelling of Cortical Prediction and Attention to Sounds that Weren't. *The Journal of Neuroscience*, 36(32), 8305-8316.

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