

Shashaank Vattikuti

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11+ peer-reviewed papers (h-index=11, 5000+ citations) - Biological Psychiatry, PLoS Computational Biology, PLoS Genetics, Gigascience, Blood, Nature/Communications Biology

Talks: Computational Psychiatry for IPAM, NIMH, and SIAM Life Sciences, Genomics for Howard Univ Applied Math Symposium, Non-biology didactic presentations (Modern Portfolio Theory, Causal inference: Judea Pearl)

Dashboards: Multimodal timeseries (WRAIR), IMF WEO Hackathon

Skills

Languages

Python, PyTorch, R, Stan, SQL, Swift, Julia, TensorFlow/TFP, MATLAB, dashboards (Plotly/Dash), javascript, Jupyter/Colab, LaTeX

Methods and systems

Nonlinear Dynamical Systems, Simulations, Statistical Modeling, Machine Learning, Data pulling-preprocessing, Epidemiology, Genetics, Cancer Genetics, AWS, High-performance computing

Project Management

Co-captain AI team - team mederrata, 1 of 25 select teams (incl. Mayo-Google and Geisinger), Centers for Medicare & Medicaid Services AI Challenge, 2019 - 2020

Project supervision-mentor (machine learning, simulations): 6+ mentees; progressed to top academic programs (Vanderbilt and Columbia MD/PhD, PhD UC-Irvine Math Bio, PhD CMU-Pitt Comp Bio), Broad Institute/Lander lab, Software Engineering Institute

2020 IPAM workshop Co-organizer: Computational Psychiatry

Education

M.D.

University of Vermont College of Medicine
2010

Recent positions

Center for Military Psychiatry and Neuroscience (WRAIR-US Army)

Data Scientist and Computational Biologist - PI

2020-present

Laboratory of Biological Modeling (NIH)

Postdoctoral fellow and Scientist

2010-2020

Projects

Signal processing (neural recordings), time-series analyses, state-space modeling

WRAIR and NIH

EEG and MEG visual-image decoding, state-space models (hidden Markov, recurrent neural networks) for sleep-wake EEG

2018 - present

Bayesian COVID-19 pandemic modeling

NIH-University of Arizona collaboration

PyStan model, data pull/processing, and global visualizations (NIH medRxiv paper, 13 citations)

May, 2020

Medical claims analysis - SQL/Python, statistical models

CMS (Medicare) AI Challenge - team Mederrata, Military Health System sleep-pathology epidemiology

October, 2019 - present

ML for nonlinear dynamical systems - cognitive test development

WRAIR and NIH

Model reduction and parameter inference of biophysical models for cognitive traits

2010 - present

Genome analysis tools

NIH

4 peer-reviewed analysis and methods paper, published contributor to Plink2 genomic analysis suite, early-stage consultant for Genomic Prediction startup (prenatal genetic screening)

2012-2016