Contact

selvamaran@gmail.com

www.linkedin.com/in/selva-m-b4a0803b (LinkedIn)
github.com/selvamaran/Health (Other)

Top Skills

Mathematical Modeling
Life Sciences
Research

Certifications

Statistical Analysis of fMRI Data
Machine Learning
AI for Medical Diagnosis
Deep Learning Specialization
Sequence Models

Honors-Awards

State Medical Entrance Exam Topper Award
Multiple poster presentation Awards in conferences

Publications

A general method to generate artificial spike train populations matching recorded neurons
Using phase resetting to predict 1:1 and 2:2 locking in two neuron networks in which firing order is not always preserved
Simulating long term trends in blood glucose level using computational models with realistic data observed across population of individuals (Work in progress).
Robust transmission of rate coding in the inhibitory Purkinje cell to cerebellar nuclei pathway in awake mice
Responses of a bursting pacemaker to excitation reveal spatial segregation between bursting and spiking mechanisms.

Selva Maran

Scientist/AI and computational science Expert/Medical Doctor
Bengaluru

Summary

Scientist/AI, Computational and Nonlinear Mathematical modelling expert/Medical doctor.

I am developing tools and techniques to build holistic pathophysiological computational and AI models that can identify novel biomarkers and help to track physiological systems interactions and changes over longtime thereby providing better and precise feedback signals. This will help in providing effective reinforcement for lifestyle modifications (Personalized Precision Preventive Care) and improved hospital care in conditions like Sepsis where precise/timely management is critical.

Many neural network technologies were inspired by the biological neurons. During my PhD and postdoc i have build realistic computational models and simulations to understanding the interactions between biological neurons and the information transmission from one layer of brain to the next. I am planning to use this knowledge to improve computational capabilities of artificial neural network models and thereby increasing application efficacy and potential.

Experience

Independant Research professional
Computational and AI models in health care
January 2018 - Present (4 years)

Today many chronic diseases are becoming pandemic rising mortality as well as morbidity (reducing quality of life). However Electronic Health Records, AI technology, wearable technology and preventive diagnostic tools are evolving rapidly along with computational power. Yet interpreting the data and applications to improve lifestyle and provide better hospital care is not successful at large scale. The major reason being biological process is

complex with multiple systems interacting in nonlinear dynamic fashion and there is lack of understanding in the system wide interaction.

I am developing tools and techniques to build holistic pathophysiological computational models and Artificial intelligence Models that can identify novel biomarkers and help to track physiological systems interactions and changes over time thereby providing better and precise feedback signals. This will help in providing effective reinforcement for lifestyle modifications (Personalized Precision Preventive Care) and improved hospital care in conditions like Sepsis where precise/timely management is critical.

Freelance
Computational Scientist and AI Expert
June 2017 - Present (4 years 7 months)

Emory University
postdoctoral research fellow
January 2010 - October 2013 (3 years 10 months)

Neural Modeling

Complex Data Analysis

Education

Emory University
Postdoctoral fellow

Louisiana State University Health Sciences Center
Doctor of Philosophy (Ph.D.), Neuroscience · (2003 - 2009)

National Institute of Mental Health and Neuro Sciences
Master of Philosophy - MPhil, Neuroscience · (2001 - 2003)

MADRAS MEDICAL COLLEGE & GOVT. GENERAL HOSPITAL (Inst. Code - 395), CHENNAI
Bachelor of Medicine, Bachelor of Surgery - MBBS, Medicine