




SRUTI MALLIK

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SUMMARY

I am a 2021 PhD graduate with 4+ years of experience in Optimization, Machine Learning and Systems Neuroscience. I am excited to share my technical knowledge and analytical skills while I continue to learn and grow professionally.

EDUCATION

WASHINGTON UNIVERSITY IN ST. LOUIS – St. Louis, USA

Ph.D. in Electrical & Systems Engineering

Aug 2021

M.S. in Electrical & Systems Engineering

Dec 2018

Courses: Intro. to ML, Intro. to AI, Optimization, Estimation & Detection, Probability & Stochastic Processes.

JADAVPUR UNIVERSITY – Kolkata, India

B.E. in Electrical Engineering

Jun 2015

SKILLS

Technical: Python (TensorFlow v2, Scikit-learn, XGBoost, statsmodel), MATLAB, R, HTML/CSS, CPP

Domain Knowledge: Optimization, Classification, Regression, Ensemble Methods, Clustering, Anomaly Detection, Statistical Inference, Time Series Analysis, Deep Learning, Sequence models

Certifications & Training: Oxford MLSS 2021, Deep Learning Specialization (Coursera), SQL Essential Training (LinkedIn).

EXPERIENCE

WASHINGTON UNIVERSITY IN ST. LOUIS – St. Louis, USA

Graduate Research Assistant

Aug 2016 – Aug 2021

- Conceptualized and coded an **optimization** framework that generates spatiotemporal neural response patterns as observed in the invertebrate olfactory system. Synthesized model was used to perform functional analysis of experimentally observed **time-series data** (*using PCA, hierarchical clustering etc.*).
- Conceptualized and coded an **algorithm for synthesizing a dynamical network** that through its distributed activity and episodic adaptation computes solutions to **model-free reinforcement learning** problems.
- Led 2 research projects from conceptualization to completion in cross-functional and interdisciplinary teams, presented research in 7 international conferences and published 2 peer-reviewed articles.

FLUOR DANIEL INDIA PVT LTD – Gurugram, India

Associate Design Engineer I

Jul 2015 – May 2016

- Designed lighting circuits for 2 modular, petrochemical refinery projects.

INDEPENDENT PROJECT

- Coded and trained an **ensemble ML model** (Random Forest + Gradient Boosting + DNN) using Scikit-learn, XGBoost and TensorFlow to predict diabetes using high dimensional clinical (EMR) data from first 24 hours of intensive care. The current model is globally ranked in the top 23% (*WIDS Datathon Leaderboard*) after EDA, feature engineering and training on a dataset of 130k+ examples. Jan 2021 – Mar 2021

LEADERSHIP

WASHINGTON UNIVERSITY IN ST. LOUIS – St. Louis, USA

Student Representative for DEI committee

Fall 2020, Spring 2021

- Facilitated discussions between graduate students and faculty members in ESE Department in topics pertaining to DEI issues encountered on campus.

Assistant to Instructor

Spring 2018, Fall 2019

- Led weekly review sessions for graduate class of 25+ students and undergraduate class of 70+ students.
- Assisted instructor in preparing course material, assignments and exams.

PUBLICATIONS

- [Episodically adapted network-based controllers](#); Sruti Mallik et. al.; IEEE CONES (*under review*)
- [Neural Circuit Dynamics for Sensory Detection](#); Sruti Mallik et. al.; Journal of Neuroscience (*Apr 2020*)