Sruti Mallik

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SUMMARY

Motivated graduate student with 4+ years of experience in machine learning, statistical modeling, and optimization using Python. Excited to leverage my domain knowledge of machine learning and data analytics into professional roles post-graduation.

EXPERIENCE

DOCTORAL RESEARCH (AUG 2016 – APR 2021)

- Conceptualized from scratch and coded a generative model of neural dynamics for olfaction. Model predictions facilitate qualitative analysis of electrophysiological data acquired from locusts. **(Code|Publication)**

- Conceptualized from scratch and coded a generative model of neural and behavioral adaptation. Model predictions facilitate understanding of high throughput neural and behavioral data from *C. elegans*.

INDEPENDENT PROJECTS

- Formulated a deep neural network model that predicts the mechanism of action of drug compounds given features such as genetic and cellular signature. Model performs with a pre-defined loss metric of 0.01678 after training on a dataset of 23k+ examples. **(Code)**
  OCT 2020 – NOV 2020

- Built a deep-learning model for image classification that classified a dataset of 16.5k+ training images comprising of 100+ unique classes of floral images with an accuracy of ~93% using a custom ResNet along with pretrained DenseNet and Xception networks. **(Code)**
  May 2020 – Aug 2020

TECHNICAL SKILLS

Languages	Python, MATLAB, R, C++, HTML, CSS
Libraries	Scikit-learn, Numpy, statsmodel, XGBoost
Deep Learning Frameworks	TensorFlow, Keras
Data Visualization	Matplotlib, Seaborn, ggplot2
Database Management	SQL, pandas
Cloud Services	AWS, Google Colab

EDUCATION

- **Washington University in St. Louis, St. Louis, MO, USA**
  Ph.D. in Electrical & Systems Engg., 2016-2021, GPA: 3.93/4
  M.S. in Electrical & Systems Engg., 2016-2018, GPA: 3.89/4
- **Jadavpur University, Kolkata, WB, India**
  B.E. in Electrical Engg., 2011-2015, GPA: 8.95/10

ML EXPERIENCE

Supervised: Generalized linear model, Naïve Bayes, SVM, Decision Trees and Ensemble Methods
Unsupervised: k-Means, Mixture Models, t-SNE, Anomaly Detection
Computer Vision: ResNet, Object Detection (YOLO), U-Net
Sequence Models: RNNs, GRUs, LSTMs, Word Embeddings
Statistics: Statistical Inference, Linear Models

COURSES

Intro. to AI, Intro. to ML, Optimization, Biological Neural Computation, Probability & Stochastic Processes, Deep Learning (Coursera)

PUBLICATIONS

- **Multiple timescale normative model of neural and behavioral adaptation**, Sruti Mallik et al. (in preparation)
- **Neural Circuit Dynamics for Sensory Detection,** Sruti Mallik et al.; Journal of Neuroscience (2020)

LEADERSHIP

- Departmental representative for Diversity, Equity and Inclusion in McKelvey School of Engineering, WUSTL (Fall 2020).
- Mentored one graduate and one undergraduate student in summer research projects (Summer 2020)
- Led weekly review sessions for undergraduate (class size: 70+) and graduate (class size: 20+) students.