Motolani Olarinre
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Education:

Carnegie Mellon University — **Pittsburgh, PA**
Doctor of Philosophy in Statistics and Machine Learning — May 2024

New Jersey Institute of Technology — **Newark, NJ**
Master of Science in Computational Neuroscience | GPA: 3.9/4.0 — May 2013
Bachelor of Science in Applied Mathematics | GPA: 3.7/4.0 — May 2011

Technical Skills:

Python (NumPy, SciPy, scikit-learn, PyTorch), R, SQL, MATLAB, .NET Framework, AWS, Lambda, Sagemaker, Amplify, Angular, JavaScript, Apache Spark, Git, GitHub.

Research Experience:

Carnegie Mellon University — **Pittsburgh, PA**
Statistics and Machine Learning Department — September 2020 – Present

- Combined signal processing techniques with statistical and machine learning models to describe pathways of signal flow through visual areas of the brain.
- Analyzed complex and noisy electrophysiology data (EEG, EMG), simultaneously recorded from hundreds of neurons using high-density multi-channel arrays, for insightful underlying patterns.

New Jersey Institute of Technology — **Newark, NJ**
Stomatogastric Ganglion (STG) Lab Group — May 2011 – May 2013

- Studied the mechanisms of neuronal homeostasis through simulations from bio-physical models of neuronal activity.

Work Experience:

Performance Photo Co. — **Pittsburgh, PA**
Machine learning engineer — January 2023 – November 2023

- Engineered a deep learning-based person reidentification system that enables precise searches within large-scale image datasets, attaining 96% rank-1 accuracy.
- Developed an intuitive front-end user interface for querying professional photo databases using Angular framework, and deployed to AWS. (https://www.performancephoto.co/)
- Increased clients' professional picture sales revenue by 33%.

AT&T Labs — **Middletown, NJ**
Applied scientist intern — June 2022 – August 2022

- Developed a statistical machine learning model to forecast customers' cell tower traffic across the country from large-scale usage datasets.
- Implemented and deployed a scalable and distributed training pipeline using Apache Spark, resulting in a 36% increase in forecasting accuracy over existing baseline.

Intel Corporation — **Hillsboro, OR**
Software engineer — July 2013 – July 2018

- Built and maintained a full-stack Windows application to automate statistical analysis of large-scale production datasets using Microsoft's .NET framework.
- Optimized product testing process by applying survival analysis to production data to gain insights, thereby reducing testing costs by 40%.

Selected Publications:

- He, R., Small, M., Scott, I., Olarinre, M., Sandoval-Reyes, M., Ferrao, P. "A novel domain knowledge informed machine learning approach for modeling solid waste management systems." Environ. Sci. Technol 57(46) (2023): 18215-18224.
- Tyo, J., Olarinre, M., Chung, Y., Lipton, Z. "MUDD: A new re-identification dataset with efficient annotation of off-road racers in extreme conditions." Preprint (2023).
- Tyo, J., Chung, Y., Olarinre, M., Lipton, Z. "Reading between the Mud: A challenging Motorcycle Racer Number Dataset." Preprint (2023).
- Kass, R., Bong, H., Olarinre, M., Xin, Q., and Urban, K. "Identification of interacting neural populations: methods and statistical considerations." Journal of Neurophysiology 130(3) (2023): 475-496.
- Chen, Y., Douglas, H., Medina, B., Olarinre, M., Siegle, J. and Kass, R. "Population burst propagation across interacting areas of the brain." Journal of Neurophysiology 128(6) (2022): 1578-1592.

- Rotstein, H., Olarinre, M., & Golowasch, J. “Dynamic compensation mechanism gives rise to period and duty-cycle level sets in oscillatory neuronal models.” Journal of Neurophysiology 116(5) (2016): 2431-2452.