Shiva FARASHAHI, Ph.D.

Machine Learning | Data Science

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I am a Machine learning Engineer, with 8+ years of applying machine learning tools in academic and industry settings. Proficient in statistical analysis of large datasets, applying machine learning and model-driven approaches, as well as scripting languages including Python.

💼 EMPLOYMENT

6/2022-Present	Senior Machine Learning Engineer Harbinger Health, Flagship Pioneering, MA, USA
10/2019-6/2022	Flatiron Research Fellow Center for Computational Neuroscience, Flatiron Institute, NY, USA

🎓 EDUCATION

9/2014-8/2019	Ph.D. in Computational Neuroscience Department of Psychological and Brain Sciences, Dartmouth College, NH, USA
9/2011-6/2013	M.S. in Biomedical Engineering School of ECE, University of Tehran, Tehran, Iran
9/2007-9/2011	B.S. in Control systems Engineering Department of EE, Ferdowsi University of Mashhad, Khorasan, Iran

💻 PROJECTS

6/2022-Present	**Enhanced feature selection for cancer classification** Using deep learning approaches, analyzed genomic and epigenomic data to extract interpretable and informative features for cancer classification. *Tools:* Python, Scikit-Learn, TensorFlow, AWS SageMaker, Transformer models
10/2019-6/2022	**Continual representation learning under noise** Explored stability of learned representations in a biologically plausible feedforward Neural Network during noisy continual learning. *Tools*: Python, SciPy, NumPy
9/2016-9/2019	**Learning generalizable representations in Reinforcement Learning** Integrated a Recurrent Neural Network into a Reinforcement Learning framework to allow for learning of generalizable representations. *Tools*: Python, Scikit-Learn, TensorFlow, Reinforcement Learning
9/2014-9/2017	**Meta Learning in artificial agents and animals** Developed a meta-learning Reinforcement Learning model and explored its behavior in various tasks. Using machine learning approaches, analyzed large neural recordings and behavioral data to investigate meta-learning in primates. *Tools*: Python, Pandas, Scikit-Learn, Study design, Latent variable/Dimensionality reduction, Classification

🔢 DATA ANALYTICS SKILLS

Programming	Python, Pandas, Scikit-Learn, SciPy, NumPy, TensorFlow, SQL, MATLAB
Machine Learning	Regression, Classification, Clustering, Latent variable/Dimensionality reduction models, Ensemble methods, Reinforcement Learning, Convolutional Neural Networks, Transformer models, Time-series analysis
Additional	Amazon AWS, Study design and measurement (Power analysis, A/B testing, Experimental design), Biophysical modeling of brain dynamics

📚 SELECTED PUBLICATIONS (Citations ~ 350)

9. Qin S, **Farashahi S**, Lipshutz D, Sengupta A, Chklovskii D, Pehlevan C (2023). Coordinated drift of receptive fields in Hebbian/anti-Hebbian network models during noisy representation learning. *Nature Neuroscience*, 1-11.

8. **Farashahi S**, Soltani A (2021). Computational mechanisms of distributed value representations and mixed learning strategies, *Nature Communications*, 12, 7191.

7. Friedrich J, Golkar S, **Farashahi S**, Genkin A, Sengupta A, Chklovskii D (2021). Neural optimal feedback control with local learning rules. *Advances in Neural Information Processing Systems*, 34.

6. **Farashahi S**, Donahue C, Hayden B, Lee D, Soltani A (2019) Flexible combination of reward information across primates. *Nature human behaviour*, 3(11), 1215-1224.

5. **Farashahi S**, Azab H, Hayden B, Soltani A (2018). On the flexibility of basic risk attitudes in monkeys. *Journal of Neuroscience*, 38(18), 4383-4398.

4. **Farashahi S**, Rowe K, Aslami Z, Lee D, Soltani A (2017). Feature-based learning improves adaptability without compromising precision. *Nature Communications*, 8(1), 1-16.

3. **Farashahi S**, Seo H, Donahue C, Khorsand P, Lee D, Soltani A (2017). Metaplasticity as a neural substrate for adaptive learning and choice under uncertainty. *Neuron*, 94(2), 401-414.

2. Bahrami F, **Farashahi S** (2017), How do we navigate our way to places?. *Computational Models of Brain and Behavior*, 357-372.

1. Soltani A, Khorsand P, Guo C, **Farashahi S**, Liu J (2016). Neural Substrates of Cognitive Biases during Probabilistic Inference. *Nature Communications*, 7(1), 1-14.

✉️ REFERENCES

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