Vy Ai Vo, Ph.D.

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AI Scientist with 5 years industry research experience, from project conception to product monetization

RESEARCH AND WORK EXPERIENCE

AI/ML Research Scientist; Deep Learning R&D Engineer 05/2019 - 11/2024

Brain-Inspired Computing Lab at Intel Labs, Intel Corporation, Hillsboro, OR

- Developed research proof-of-concepts and software to transfer technology to business units
- Drove innovation by facilitating cross-functional, interdisciplinary collaboration with experts across academic institutions, internal teams, and disciplines [13 papers, 3 preprints, 5 patents]
- Defined research agenda to optimize search for retrieval augmented generation (RAG) [1 paper] to support emerging customer uses. Developed RAG tech demo showing over 50x speedup
- Division Recognition Award for risk-taking and fast, excellent execution of research showcase demo
- Mentored and trained interns [1 full-time hire], PhD students [1 dissertation award, 2 postdoc funding awards], and colleagues [1 team manager/technical lead], coaching on teamwork, critical thinking skills

Ph.D. research 09/2013 – 03/2019

Neurosciences Graduate Program, University of California, San Diego, La Jolla, CA

- Applied ML and signal processing techniques to diverse data types (fMRI, EEG, human behavior) to investigate how human brains process visual information under cognitive demand [6 papers]
- Optimized analysis on large, noisy datasets (e.g. 400-500% increase in efficiency of model fitting)
- Taught graduate-level advanced data analysis methods and statistics
- Structural MRI segmentation, multi-band fMRI acquisition, eye-tracking, psychophysics

Lab manager & research assistant 07/2011 – 07/2013

Brain & Cognitive Sciences Program, University of Rochester, Rochester, NY

- Applied principal component analysis to summarize metacognitive abilities in children [1 paper]
- Interviewed, mentored, and managed research assistants and lab volunteers

EDUCATION

University of California, San Diego. Ph.D., M.S. in Neurosciences (Computational). 2013 - 2019

Swarthmore College. B.A., High Honors, double major in Cognitive Science, Biology. 2007 - 2011

SKILLS

Programming: in order of fluency: Python, R, MATLAB, C, Javascript, LabVIEW.

Machine learning: Transformers, recurrent neural networks, dimensionality reduction, supervised and unsupervised learning, generalized linear models, model regularization, big data, preprocessing. Deep neural network optimization, pre-training, fine-tuning, and inference on scalable clusters (i.e. multi-GPU, CPU/GPU)

Frameworks/Tools: git/GitHub/GitLab. HPC architectures, some cloud computing, some SQL. *MLOps*: PyTorch, Docker, Tensorboard, Kubernetes; *Data science*: pandas, scikit-learn. *LLMs*: HuggingFace, Langchain, OpenAI API.

Statistics: Null-hypothesis testing, Monte Carlo methods, some Bayesian models. R, SPSS, JMP.

SELECTED PUBLICATIONS

Kadosh, T., Hasabnis, N., **Vo, V.A.**, Schneider, N., Krien, N., Capotă., M., Wasay, A., Tamir, G., Willke, T., Ahmed, N., Pinter, Y., Mattson, T., Oren, G. (2024). MonoCoder: Domain-Specific Code Language Model for HPC Codes and Tasks. Outstanding paper award at *IEEE High Performance Extreme Computing*.

Tang, J., Du, M., **Vo, V.A.**, Lal, V., Huth, A.G. (2023). Brain encoding models based on multimodal transformers can transfer across language and vision. *Neural Information Processing Systems (NeurIPS)*.