Luong-Ha Nguyen

Artificial Intelligence & Machine Learning Engineer

Experienced AI/ML Engineer with a background in developing and optimizing learning paradigms as well as AI/ML pipelines, including modeling, validation, and deployment strategies on cloud platforms. Skilled in uncertainty modeling and machine learning approaches, with a notable track record in driving innovation in manufacturing, renewable energy, infrastructure monitoring, and aerospace sectors through interdisciplinary teamwork.

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SKILLS

Tech Stack C/C++ | CUDA | Nsight Systems | Python | JavaScript | React | Terraform | AWS | Azure | Sagemaker | Microservices | gRPC | REST API | Kubernetes | PostgreSQL | Docker | GitHub | Helm Charts

AI/ML PyTorch | TensorFlow | Numpy | Pandas | Scikit-learn | Probability & Statistics | Reinforcement Learning | Machine Learning Theories | Supervised Leanring | Unsupervised Leanring | XGBoost

Languages Fluent in English and French, with native proficiency in Vietnamese

PROFESSIONAL EXPERIENCE

Machine Learning Engineer at AI Redefined | Montreal, QC, CA — July, 2022 - present
- Develop end-to-end machine learning pipelines for time series forecasting and anomaly detection, using reinforcement learning with human feedback to continually enhance accuracy through insights from operators and asset managers.
- Lead the development of vision-based detection algorithms for fault detection.
- Develop cloud-based tools for automating model training, hyperparameter tuning, and model performance tracking.

Applied Research Associate at Polytechnique Montreal | Montreal, QC, CA — May, 2022 - present
- Lead and coordinate a team of PhDs and postdocs to develop an AI/ML framework, optimizing accuracy and reducing training time in deep neural networks, paving the way for major advancements in various industries.
- Lead the technical development of open-source software for Bayesian neural networks cuTAGI.
- Lead the technical development of Python interface for integration with the C++/CUDA backend.

Machine Learning Engineer at Shearwater Aerospace | Montreal, QC, CA — September, 2021 - June, 2022
- Developed machine learning-based path planning system to improve UAV flight efficiency.
- Developed an autonomous control system using reinforcement learning for UAVs.

Postdoctoral Researcher at Polytechnique Montreal | Montreal, QC, CA — November, 2019 - September, 2021
- Developed a theory-based approach for modeling uncertainty in deep neural networks, enhancing reliability.
- Develop an open-sourced package BDLM for detecting anomalies in time series.

EDUCATION

Ph.D. in Computer Science for Civil Engineering at Polytechnique Montreal | Montreal, QC, CA — October, 2019

PERSONAL PROJECTS

cuTAGI for Bayesian Neural Networks (2018-present) | tagiml.com
- cuTAGI: An open-source Bayesian neural network developed in C++/CUDA. It quantifies uncertainty in deep neural networks for various learning tasks, enhancing output reliability and accuracy.

LLM for Finance (2023) | Source code: https://github.com/lhnguyen102/llm-finance
- This project is only for educational and learning purposes, focusing on guiding developers on how to build an LLM model from scratch and then fine-tune it for different tasks.

PUBLICATIONS

1. Analytically Tractable Hidden-States Inference in Bayesian Neural Networks. Journal to conference track. *ICLR*, 2024.
2. Tractable Approximate Gaussian Inference for Bayesian Neural Networks. *JMLR*, 2021.