MOSLEM SHOKROLAHI

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Summary

Deep learning researcher with 7 years of experience working on generative models, lifelong learning, and machine unlearning. Skilled in building and deploying computer vision systems using PyTorch and OpenCV, with practical experience on Edge AI platforms.

Experience

AI CONSULTANT | KNOWQUEST | TORNTO| SEPT. 2023 – PRESENT

· Improving the core feedback and recommendation system with an LLM-facilitated RAG (Retrieval-Augmented Generation) framework. The enhancement brought a 23% improvement in Mean Reciprocal Rank (MRR) and considerably enhanced user engagement.

RESEARCH ASSISTANCE | UAI LAB | QUEEN'S UNIVERSITY | MAY 2021 – PRESENT

· Designed a robust framework for safe and fair diffusion-based image generation, enabling high-quality and ethically responsible outputs. The approach significantly improved the fairness of image distribution across age, gender, and race attributes, while maintaining FID scores close to the upper bound.
· Designed a generative text-to-image model that significantly improves brain tumor detection accuracy by synthesizing high-fidelity medical images for diagnostic support.
· Developed continual learning algorithms based on deep metric learning to mitigate catastrophic forgetting, achieving state-of-the-art classification performance with ResNet.
· Proposed novel machine unlearning techniques for efficient data erasure from trained models.

MACHINE VISION ENGINEER | SAESPADAN | ISFAHAN | IRAN | SEPT. 2018 – MAY 2021

· Designing a real-time machine vision system for stone classification, leveraging an ensemble of ResNet and EfficientNet models. Achieved a 40% reduction in human error and about 30% increase in throughput by using weighted averaging of model predictions.

Education

PH.D. IN COMPUTER ENGINEERING | MAY 2021 | QUEEN'S UNIVERSITY, KINGSTON, ON

M.SC. IN COMMUNICATION SYSTEMS | SEPT. 2015 | IUT | ISAFAHAN, IRAN

Skills & Abilities

· **Programming Languages:** Python (expert), C# (proficient), C++(proficient)
· **Frameworks and Tools:** PyTorch, TensorFlow, OpenCV, scikit-learn, SQL, AWS, Git, MATLAB
· **Machine Learning Expertise:** Diffusion Models, Safe and Fair Gen. AI, LLMs and Agents, RAG

Selected Publications

- **Shokrolahi, S.M.**, Kim, I.M. (2025). *Combating Inter-Task Confusion and Catastrophic Forgetting by Metric Learning and Model Reuse*. Transactions on Machine Learning Research.
- **Shokrolahi, S.M.**, Kim, I.M. (under review). *Interpretable and Unbiased Text-to-Image Generation by Diffusion Models with Background Fidelity*. Submitted to NeurIPS 2025.
- **Shokrolahi, S.M.**, Kim, I.M. (under review). *Erasing the Past: Zero-Shot Machine Unlearning with Erasing Samples*. Submitted to IEEE Transactions on Artificial Intelligence.