

Amanpreet S. Walia

amanpreetwalia278@gmail.com • +1 (905) 781-9261 • Brampton, ON, Canada

SUMMARY	<ul style="list-style-type: none">• Computer Vision Research Engineer specializing in on-device image enhancement, model optimization (SNPE/DLC, AIMET), and local LLM deployment (Ollama, llama.cpp).• Strong research background with CVPR publications and a US patent in computational photography.
EDUCATION	<div><div>M.Sc. (Thesis), CS (McGill University) Thesis: Uncertainty in depth estimation using RGB-gated images. GPA: 3.90/4.00</div><div>B.Eng., Computer Engineering (York University) GPA: 7.9/9.0</div></div> <div>2018 – 2021 2013 – 2018</div>
TECHNICAL SKILLS	Languages: Python, C++, C, Java, MATLAB, SQL Frameworks/Tools: PyTorch, Qualcomm SNPE, AIMET, OpenCV, TensorFlow, Keras, llama.cpp, Ollama, \LaTeX Hardware: Qualcomm Snapdragon, Nvidia Jetson TX1, Huawei Atlas 200, Raspberry Pi
EXPERIENCE	<div><div>Computer Vision Research Engineer, Samsung Research America Theme: <i>Efficient Models for Image Enhancement</i> <ul style="list-style-type: none">• Deployed image enhancement models to Qualcomm devices by converting pipelines to SNPE/DLC and resolving operator/runtime constraints for production inference.• Built and optimized super-resolution and HDR components with a focus on on-device quality stability (artifact control, consistency across scenes) and runtime efficiency.• Improved latency and memory footprint through deployment-oriented architecture changes and quantization workflows using AIMET.</div><div>Computer Vision Researcher, Algolux Theme: <i>Depth Estimation from RGB & Gated Images</i> <ul style="list-style-type: none">• Developed a self-supervised depth estimation approach for gated imaging that improved generalization and closed the gap with prior supervised baselines under real capture conditions.</div><div>Machine Learning Engineer (Full-time Contract), Huawei Canada Theme: <i>Model Compression for NLP on NPU</i> <ul style="list-style-type: none">• Ported low-rank decomposed GPT-2/CPM-style models to Huawei NPU execution constraints; validated accuracy/performance trade-offs and integration readiness.</div></div> <div>Dec 2022 – Present Aug 2021 – Dec 2022 Mar 2021 – Aug 2021</div>
PROJECTS	<div>Local LLM Exploration <ul style="list-style-type: none">• Evaluated quantized LLMs (Llama-3, Mistral) on edge hardware using llama.cpp and Ollama; focused on GGUF format optimization and on-device performance profiling.</div> <div>2024 – Present</div>
PUBLICATIONS	<ul style="list-style-type: none">• Amirhossein Kazerooni, Maitreya Suin, Tristan Aumentado-Armstrong, Sina Honari, Amanpreet S. Walia, Iqbal Mohamed, Kosta Derpanis, Babak Taati. <i>Face2Scene: Using Facial Degradation as an Oracle for Diffusion-Based Scene Restoration</i>. CVPR 2026 (Accepted).• Stefanie Walz et al. <i>Gated Stereo: Joint Depth Estimation from Gated and Wide-Baseline Active Stereo Cues</i>. CVPR 2023.• Amanpreet S. Walia, S. Walz et al. <i>Gated2Gated: Self-Supervised Depth Estimation from Gated Images</i>. CVPR 2022.
PATENTS	<div>Dual-camera Joint Denoising-Deblurring using Burst of Short and Long Exposure Images. Inventors: Shayan Shekarforoush, Amanpreet Singh Walia, Aleksai Levinshtein, Konstantinos G. Derpanis, Marcus A. Brubaker Patent Application: US20240311968A1</div> <div>2024</div>