

HANLIN “ASHER” MAI

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EDUCATION

University of Illinois Urbana-Champaign (UIUC)

Aug 2023 – Dec 2025

M.S. in Electrical and Computer Engineering

GPA: 4.0/4.0

University of Illinois Urbana-Champaign (UIUC)

Aug 2019 – May 2023

Bachelor of Science in Computer Engineering with Highest Honor

GPA: 3.93/4.0

James Scholar Honors Program, Dean's List

SKILLS

Programming C++, Python, CUDA, Swift

Deep Learning Pytorch, JAX, Scikit-Learn, OpenCV, Pandas, ROS

Web and Design Git, HTML, CSS, JavaScript, React, CI/CD, Docker, Blender 3D

Coursework:

Artificial Intelligence, Principles of Safe Autonomy, Applied Parallel Programming, Machine Learning for Signals
Machine Learning, Optim. in Computer Vision, Computational Photography, 3-D Vision

EXPERIENCE

Waymo

May – Aug 2025

Machine Learning Training Infrastructure Intern

Mountain View, CA

- Implemented automated early stopping in perception and planning training pipelines, reducing average training time and compute resource usage by more than 20%.
- Developed interactive tool for offline analysis of existing training logs, enabling developers to systematically determine the optimal set of hyper-parameters for their particular use case.

Rivian Automotive, Inc.

May – Aug 2024

Machine Learning Intern

Palo Alto, CA

- Designed wrapper module that transforms PyTorch ResNets into quantized version with any bit-widths
- Performed Quantization-Aware Training on ResNet variants without using Pytorch quantization framework
- Integrated optimization techniques such as Batch Normalization Folding and mixed precision into the wrapper

Rivian Automotive, Inc.

Jan – Aug 2023

Machine Learning Intern

Champaign, IL

- Added new capabilities to optimize real-time image processing in Advanced Driver-Assistance System (ADAS) models
- Generated random neural network test cases with respective inputs and outputs using PyTorch
- Built end-to-end testing pipeline with Gitlab CI/CD on various deep-learning Models for Rivian hardware platform

RESEARCH PROJECTS

Convolutional Neural Network Pruning and Quantization for FPGA

May 2022 – Sep 2022

Prof. Volodymyr Kindratenko | National Center for Supercomputing Applications

- Train VGG16 image classification CNN using PyTorch and CIFAR10 dataset with team of three
- Reduce model size by more than 4x using pruning and PyTorch's Post Training Quantization framework
- Collaborate with FPGA team to integrate quantized 8 bit convolutional kernels for image classification on hardware

COURSE PROJECTS

Digital Notes With Any Pen on Any Surface

Aug 2022 – Dec 2022

CS 445: Computational Photography

- Designed vision-based system to allow a user to take notes digitally using only a webcam in real-time
- Developed calibration method that translates detected stylus locations on the table to drawings on screen
- Received Donald L. Bitzer and H. Gene Slottow Creativity Award. Presented project at UIUC Engineering Open House

Autonomous Parking Navigation

May 2022

ECE 484: Principle of Safe Autonomy

- Collaborated with team and used A-star search planning algorithm for autonomous parking on Gazebo simulator
- Integrated planning algorithm with on-board system of Polaris GEM Vehicle for real world parking test
- Verified and improved success of parking by adjusting parameters (e.g. braking condition, planning frequency)

PUBLICATIONS

Shadows Don't Lie and Lines Can't Bend! Generative Models don't know Projective Geometry... for now

A. Sarkar*, H. Mai*, A. Mahapatra*, S. Lazebnik, D. A. Forsyth, A. Bhattad

(* for equal contribution)

CVPR 2024