

Brian Park

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EDUCATION

Carnegie Mellon University, Robotics Institute

December 2025

Master of Science in Computer Vision

Pittsburgh, PA

- **GPA: 4.28/4.0**; Computer Vision, Multimodal Machine Learning, Robot Learning, Visual Learning and Recognition, Robot Localization and Mapping, Learning for 3D Vision, F1Tenth Autonomous Racing

University of California, Los Angeles

March 2024

Bachelor of Science in Computer Science and Engineering

Los Angeles, CA

- **GPA: 3.69/4.0**; Deep Learning, Machine Learning, Computer Graphics, Computer Architecture, Operating Systems

EXPERIENCE

NVIDIA

Santa Clara, CA

Perception Software Engineer Intern, Autonomous Vehicles

May 2025 – Aug 2025

- Integrated a transformer-based model to convert 3D multi-camera features into 2D Bird's Eye View (BEV) space, enhancing multi-modal occupancy grid generation for parking.
- Improved the average recall of hazard objects by 8.4%, improving upon the MLP-based baseline method.

Perception Software Engineer Intern, Autonomous Vehicles

May 2024 – Aug 2024

- Implemented a CNN-based semantic segmentation model for 2D BEV parking edge detection.
- Utilized SAM segmentation model to evaluate the geometric precision of ground truth labels, driving optimized localization for parking space detection.

Perception Software Engineer Intern, Autonomous Vehicles

June 2023 – Sept 2023

- Performed data augmentation on parking space training data, generating 1.7 million scenes of AR-generated wheel stoppers, utilizing PyTorch, SQLite.
- Built a perception model evaluation framework by implementing Key Performance Indicator (KPI) metrics, including F-Score, Intersection Over Union (IOU), and Hausdorff Distance.
- Awarded 2nd Place at 2023 NVIDIA Global Intern Project Showcase.

Johnson & Johnson MedTech

Pittsburgh, PA

Computer Vision Student Researcher

Jan 2025 – Present

- Enhance endoscopic image fidelity of Bronchoscopy and Urology surgical robots, through generative AI models that reduce blur, visual obstructions, and improper light exposure.
- Increased Signal-to-Noise (SNR) Ratio by 12.68% by implementing spatial-temporal transformers and diffusion restoration models for endoscopic images.

Structures-Computer Interaction at UCLA

Los Angeles, CA

Undergraduate Researcher; Advisors: Prof. Jungseock Joo, Prof. M. Khalid Jawed

Sept 2022 – Mar 2024

- Devised a sampling pipeline utilizing NVIDIA Instant-NGP and Unity C# Engine to generate neural radiance field objects (NeRFs) for 3D Reconstructions of agricultural fields, achieving a 98.3% reduction in sampling time.
- Formulated mBEST Perception Algorithm to perform realtime detection of Deformable Linear Objects (DLOs).

PUBLICATIONS

- Choi, A., Tong, D., **Park, B.**, Terzopoulos, D., Joo, J., Jawed, M., "mBEST: Realtime Deformable Linear Object Detection Through Minimal Bending Energy Skeleton Pixel Traversals", IEEE Robotics and Automation Letters, 2023

PROJECTS

- A knowledge distillation framework that integrates a transformer-based backbone to a diffusion model, achieved a 0.94% increase in accuracy on CIFAR-100 image classification.
- A GPU-accelerated Model Predictive Path Integral (MPPI) planner on the F1Tenth autonomous racing platform, achieving a 19.1s reduction in lap time against a traditional Rapidly exploring Random Tree (RRT) planner.

SKILLS

- Languages: Python, C++, Bash, SQL
- Technologies: PyTorch, OpenCV, NumPy, Tensorflow, Pandas, Unity, SQLite, Git