Brian Park

seong.park121@gmail.com | (619) 227-7142 | briannparkk.github.io

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