Sooyoung Jeon

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Research Interest

My research interests include computer vision and machine learning, with a focus on leveraging data to solve real-world problems effectively and improving perception systems in challenging domains.

Education

The Ohio State University, Columbus OH — Aug 2023 – Present
M.S. in Computer Science and Engineering - Advisor: Wei-Lun (Harry) Chao

The Ohio State University, Columbus OH — Aug 2019 – May 2023
B.S. in Computer Science and Engineering - Artificial Intelligence, Minor in Statistics

Research Experience

Research Assistant, The Ohio State University – Columbus, OH — Aug 2024 – Present

Synthetic LiDAR Data Generation for Collaborative Autonomous Vehicles
- Contributed to the evaluation and validation of synthetic LiDAR data generated using diffusion models to address data scarcity in collaborative autonomous driving (CAV) research.
- Worked on training collaborative autonomous driving (CAV) and single LiDAR detection models to demonstrate the benefits of the generated LiDAR data for practical applications.

Stereo Depth Enhancement with Sparse LiDAR Integration
- Enhanced stereo depth estimation by incorporating sparse LiDAR points through fusion techniques to improve depth accuracy.
- Conducted experiments to demonstrate the benefits of guided sparse LiDAR points in stereo depth estimation with fewer points compared to other methods.

Wildlife Camera Trap Animal Image Search
- Assisted in building a CLIP-based animal image search system for biologists to facilitate model selection for wildlife monitoring applications.

Publications

- Transfer Your Perspective: Controllable 3D Generation from Any Viewpoint in a Driving Scene

  Tai-Yu Pan, **Sooyoung Jeon**, Mengdi Fan, Jinsu Yoo, Zhenyang Feng, Mark Campbell, Kilian Q Weinberger, Bharath Hariharan, Wei-Lun Chao

  *Under Submission - IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025*

- An Exploratory Journey in Extremely Sparse LiDAR-Guided Stereo Through the Lens of Depth Pre-Fill

  Jinsu Yoo, **Sooyoung Jeon**, Tai-Yu Pan, Wei-Lun Chao

  *Under Submission - IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025*

Experience

Buckeye Autodrive, The Ohio State University – Columbus, OH — Aug 2024 – Present
Perception Lead

- Developed 2D / 3D perception models in a pipeline operating with Robot Operating System (ROS).
- Managed 20+ undergraduate and graduate students.

J.P. Morgan Chase – Columbus, OH — June 2022 – Aug 2022
Software Engineering Intern

- Developed auto-mail service for small business owner's lawns to inform missing documents with Java.

- Added REST API endpoints to provide various types of templates of documents to fill to the customer.

Lexon Corporation – Columbus, OH   May 2021 – Aug 2021
Inter-Developer Intern

- Contributed to maintaining and upgrading the automobile parts data control web service.

Skills

- *Programming Languages*: Python, C, Java, MySQL, Typescript, Javascript, Visual Basics, Spring, R, PHP, and Ruby.
- *Software*: PyTorch, CUDA, ROS, Linux, UNIX, OOP, MVC model, Junit debugging, REST API, Firebase, ER-Model, and Git.
- *Languages*: Fluent in Korean, English.