

Bodong (Eric) Bi

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EDUCATION

University of Michigan, Ann Arbor

Sep. 2025–May 2027 (Expected)

M.S. in Electrical and Computer Engineering (ECE), GPA: 3.89/4.0

Ann Arbor, MI, USA

Joint Undergraduate Program

Sep. 2020–Jun. 2024

University of Electronic Science and Technology of China

Chengdu, China

B.Eng. in Communication Engineering, GPA: 3.63/4.0

University of Glasgow

Glasgow, Scotland

B.Eng. in Electronics and Electrical Engineering

with Honours of the First Class

PUBLICATIONS

- [1] [\[Project Page\]](#) Jiawei Wang*, **Bodong Bi***, Kaiyang Luo, Xujie Song, Shaowei Hua, Haowei Sun, Jun Gao, Henry X. Liu[†]. “WorldCorner: Evaluating Driving World Models for Safety-Critical Event Generation”, *Submitted to AAAI 2027; under review*.
- [2] **Bodong Bi**, Bo Yang[†], Zhixin Liu, Junmin Lyu, Feng Bao, Chao Liu. Reconstructing 3D Voxels from Ultra-sparse-view 2D X-ray Images Using a Dual-domain Balanced Network, *Published in Measurement and Control*.

PUBLICATION AWAITING SUBMISSION

- [3] **Bodong Bi***, Nuo Chen*, Zhiwen Fan[†]. “DC-Forward: Robust FeedForward Reconstruction from In-the-wild Driving-Scene Videos”. *Planned submission to CVPR 2027*.
- [4] Jiawei Wang*, Jun Wang*, **Bodong Bi***, Xujie Song, Haowei Sun, Jun Gao, Henry X. Liu[†]. “CrashRecast: Agentic Crash Reconstruction from Accident Reports via World Models”. *Planned submission to CVPR 2027*.

RESEARCH EXPERIENCE

Feedforward 4DGS Reconstruction from In-the-wild Driving-Scene Videos

Collaborative Research, Project Leader

Advisor: Zhiwen Fan, [PHAI Lab](#), Texas A&M University

Aug. 2026–Present

- Built a 4DGS-based perturbation pipeline using text-guided segmentation and semantic opacity refinement to extract foreground occlusions from real videos, with configurable camera parameters; generated 4,000+ in-the-wild driving-scene videos from nuScenes, Waymo, and other public datasets.
- Proposed a 4DGS reconstruction architecture that predicts **patch-level reliability for geometry and appearance**, routing each patch to geometry estimation, appearance modeling, or both and discarding patches that support neither.
- Resolved foreground-occlusion and reflection artifacts in in-the-wild driving scenes, **improving PSNR by approximately 2 dB** on average over state-of-the-art methods (DGGT, STORM, and Instant-NuRec).
- **First-authored** a research paper [3] detailing these findings, ready for submission to **CVPR 2027**.

*Equal contribution. [†]Corresponding author.

Agentic Crash Reconstruction from Accident Reports via World Models

Collaborative Research, Main Contributor

Advisor: Henry Liu, *Mobility Transformation Lab*, University of Michigan

Jul. 2026–Present

- Developed an agentic workflow to infer initial and collision positions from NHTSA/TIMS accident reports and road topology; generated approximately **3,500 valid crash trajectories** for scene reconstruction through traffic simulation and iterative agent review.
- Proposed a pipeline to **convert crash trajectories into photorealistic 4DGS scenes**: reconstructed sites from location-matched street-view imagery, inserted prepared vehicle assets along inferred trajectories, and refined lighting and appearance with diffusion priors.
- Contributed to CrashRecast [4] as a **co-first author**, developing its **visual reconstruction and video enhancement pipeline**. The paper is ready for submission to **CVPR 2027**.

WorldCorner: Evaluating Driving World Models for Safety-Critical Event Generation

Collaborative Research, Project Leader

Advisor: Henry Liu, *Mobility Transformation Lab*, University of Michigan

Mar. 2026–Jul. 2026

- Proposed WorldCorner, **the first benchmark** dedicated to evaluating safety-critical event generation in driving world models, shifting evaluation from perceptual realism to event-level fidelity and downstream utility for autonomous-driving safety.
- Constructed CornerScenes, a dataset of over 1,200 safety-critical scenarios created through adversarial modifications of real scenes, covering diverse collision modes and interactions with either the ego or another vehicle as the adversarial actor.
- Benchmarked seven world models, revealing a gap between conventional generation scores and safety-event fidelity: most produced photorealistic videos but achieved only **54%–66% event-progression accuracy**; **four scored below 40% in event-type accuracy**.
- Owned end-to-end experiment planning and execution, structuring the workflow into adversarial behavior generation and world-model rendering and orchestrating 4,000+ GPU-hours of experiments across multiple compute nodes.
- Contributed to WorldCorner [1] as a **co-first author**. The paper has been submitted to **AAAI 2027** and is under review.

Pre-Master’s Research

Research Assistant

Dec. 2023–Jun. 2025

- **CBCT Voxel Reconstruction from Sparse X-Ray Views**: Developed a U-Net framework supporting 2–4-view inputs, reducing radiation dose by approximately 50% and achieving SSIM > 0.94; published in *Measurement and Control*.
- **Automated Bug Discovery and Repair in Autoware**: Developed an automated testing framework that localizes faults from module to file level, achieving 97% message-level attribution accuracy on a benchmark built from repository issues.

HONORS & AWARDS

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| • Excellent Student Scholarship (Top 15%, ¥4500) | 2023 |
| • Model Student Scholarship (Top 25%, ¥3000) | 2021 |

TECHNICAL SKILLS

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- **Programming**: Proficient in Python, Matlab and agentic coding tools (Codex, Claude Code). Fundamental knowledge of C/C++.
 - **Software**: Proficient in Slurm, Linux, Git, PyTorch, HuggingFace Transformers, LaTeX.