Brian Xu

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Education

MSc **Brown University**, Computer Science — Sept 2024 – May 2026

- **Coursework:** Seminar in Computer Vision for Graphics and Interaction

BSc **University of California, Irvine**, Computer Science — Sept 2019 – Dec 2022

- GPA: 3.88/4.0
- **Coursework:** Machine Learning and Data Mining, Introduction to Probabilistic Graphical Models, Introduction to Optimization, Computational Photography and Vision, Project in Computer Vision

Research Experience

Brown University, Graduate Student Researcher — Sept 2024 – present

- Conducting research on 3D reconstruction methods in low-light environments.

Experience

Meta Platforms, Inc., Software Engineer Intern — Burlingame, CA, June 2022 – Sept 2022, 3 months

- Improved the speed and scalability of a data annotation pipeline.
- Increased annotation speed by integrating computer vision models for machine-assisted annotations.
- Reducing data footprint by over 80% through efficient caching.
- Redesigned database to better integrate with internal data visualization tools.

Amazon.com, Inc., Software Engineer Intern — Seattle, WA, June 2021 – Sept 2021, 3 months

- Created a progressive web app to handle the user registration process.
- Implemented ML/CV models to process information from user-uploaded images.
- Designed a robust and scalable backend with the Spring Framework.
- Created and deployed server endpoints to handle sensitive user information.

Projects

Scaffold-GS Nerfstudio Extension — brian-xu/scaffold-gs-nerfstudio

- Implementation of Scaffold-GS as a nerfstudio extension.
- Enabled interaction and reproducibility through the nerfstudio framework.
- Implementation of follow-up paper GSDF leverages a dual-branch architecture to increase reconstruction accuracy and export meshes.

HyP-NeRF: Learning Improved NeRF Priors using a HyperNetwork — brian-xu/HyP-NeRF

- Partial implementation of a research paper, building on the author's released work.
- Code contributions include conditioning the model to generate NeRFs from text and images via CLIP embeddings.

Inverse Graphics GAN: Learning to Generate 3D Shapes from Unstructured — brian-xu/IGGAN

2D Data

- Implemented and trained a neural network that learns a distribution of 3D models from 2D images.
- Built an efficient data pipeline to enable model training.

Leadership and Membership

Brown Visual Computing, visual.cs.brown.edu Sept 2024 – present

- Attended NECV2024 @ Yale University

Artificial Intelligence @ UCI, Student Mentor Mar 2020 – June 2021

- Organized and planned quarterly meetings.
- Designed and taught machine learning workshops to students.
- Led club presentation for university hackathon and judged student projects.

Workshops and Presentations

Dark Scene Reconstruction Survey Nov 2024

- Brown Visual Computing

RenderNet: 3D Voxel Rendering with Deep Convolutional Networks Apr 2021

- Artificial Intelligence @ UCI

HackUCI - Supervised Learning with Online Datasets Jan 2021

- HackUCI 2021

PIFuHD: Image-Based 3D Human Shape Estimation Jan 2021

- Artificial Intelligence @ UCI

Fundamental Machine Learning / Data Science Tools Nov 2020

- Artificial Intelligence @ UCI

BERT: Bidirectional NLP with Transformers May 2020

- Artificial Intelligence @ UCI