

Yuanhao Wang

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Education

Brown University, Sc.B. Applied Math – Computer Science, 4.0/4.0 GPA Providence, RI | Aug. 2019 – May 2023

- Graduated with Honors; won Senior Price in Computer Science;
- Core Courses: Advanced Deep Learning, Graduate Seminar in Computer Vision, Machine Learning, Probability and Statistics, Computer Systems, Abstract Algebra, Quantum Mechanics, Partial Differential Equations, and Real Analysis.

Research Experience

Brown Visual Computing, Undergraduate Research Assistant Providence, USA | Jan. 2021 – present

- **Individual project: Towards 3D Reconstruction in the Wild**
 - Worked with Dr. James Tompkin and Dr. Kwang In Kim on unsupervised single-view 3D reconstruction with unknown camera poses; explored various methods to learn 3D representations directly from data by leveraging the [GaussianGAN](#) backbone; model achieved good reconstruction results when camera poses were available.
 - Re-implemented GaussianGAN in PyTorch. [GitHub link](#)
- **Interdisciplinary project: Deep Learning Models and Human Visual Systems, First Author**
 - Investigated the similarity between unsupervised deep learning models and human visual systems in depth-estimation responses with Dr. James Tompkin; replicated human-like perceptual biases in CNN models;
 - The paper was accepted by ACM Symposium on Applied Perception (SAP) 2023 and was referred to a special issue of the journal Transactions on Applied Perception for potential publication.

Course Projects

Language-guided 3D Object Editing

CSCI 2951I, Computer Vision for Graphics and Interaction, Fall 2022

- Led the project on modifying the appearance and geometry of 3D objects by leveraging CLIP (*Contrastive Language–Image Pre-training*); designed and implemented models; achieved competitive results in mesh stylization;
- Plan to explore CLIP-guided geometric deformation and eventually put together a paper for conference submission.

Dynamic Neural Radiance Field with INGP

CSCI 2952N, Advanced Topics in Deep Learning, Spring 2022

- Attempted to fuse Instant Neural Graphics Primitives (INGP) with the Neural Scene Flow Field (NSFF) backbone to efficiently model moving objects; proposed ideas to extend the multi-resolution hash-encoding to dynamic settings;
- Took the charge of running experiments and analyzing results. [GitHub link](#)

Calligraphy Style Transfer

Brown Visual Computing Onboarding Project, Winter 2021

- Re-implemented CycleGAN for calligraphy style transfer on Chinese characters; proposed a variant of CycleGAN that achieved competitive results on the synthetic dataset of characters. [GitHub link](#)

Waste Image Classification

CSCI 1470, Deep Learning, Fall 2020

- Modified DenseNet to reach state-of-the-art image classification accuracy on a waste image dataset. [GitHub link](#)

Internship Experience

China Construction Bank, Machine Learning Intern & Project Leader Suzhou, China | May 2021 – Jun. 2021

- Engineered a neural-network solution to fraud detection among over 20 million user accounts; developed an algorithm that significantly improved both the accuracy and call back, which was deployed in production.

Yinghe Science and Technology Ltd., Data Scientist Intern

Suzhou, China | May 2020 – Jun. 2020

- Automated web content scraping with BeautifulSoup and Selenium, built a database with MySQL, extracted information from raw text with NLP tools;
- Turned data into actionable insights and presented them to the business team for strategic planning.

Skills and Interests

- Proficient in Python, C, Java, Scala, Matlab, SQL, Pyret, DrRacket;
- Hands-on experience with mainstream deep-learning frameworks (PyTorch and TensorFlow);
- Hands-on experience with 3D engines (e.g. Blender);
- Leadership: Co-Captain of Brown Badminton Team.