Haoda Li

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Education

University of California, Berkeley **August 2022 – May 2023**
M.Eng. *in Electrical Engineering and Computer Science (GPA: 3.93/4.0)* Berkeley, CA, USA

University of Toronto, St. George Campus **September 2017 – June 2022**
B.Sc. *in Computer Science & Data Science (GPA: 3.91/4.0)* Toronto, ON, Canada

Experiences

Amazon Web Services, Annapurna Labs **September 2024 – Present**
Software Engineer - ML Compiler Toronto, ON, Canada

- Worked on AWS Neuron SDK, optimized GenAI models performance on AWS Neuron chips

AniML, Inc. **March 2023 – August 2024**
Machine Learning Engineer Montreal, QC, Canada

- Joined as a founding engineer, built end-to-end solutions for monocular camera 3D reconstruction.
- Implemented CUDA algorithms for accelerating neural rendering and generative vision models.
- Researched on combining neural rendering and 3D generative AI for high-fidelity object reconstruction.

Huawei Canada **May 2020 – August 2021**
Research Engineer Intern Markham, ON, Canada

- Engineered on video understanding algorithms and created prototypes for AI video editing applications.
- Maintained the automated pipeline for clustered model training and cloud deployment using Docker.
- Used OpenCV and C++ to create test systems for hand tracking and action recognition.

Researches

Video and Image Processing Lab, University of California, Berkeley **August 2022 – May 2023**
Research student, supervised by Avideh Zakhor Berkeley, CA, USA

- Researched on and published a novel method for improving quality and efficiency of 3D indoor reconstruction using low-cost micro drones.
- Surveyed on neural rendering methods and engineered on optimizations for capturing and modeling large, complex indoor environments.

SysNet Group, University of Toronto **January 2022 – June 2022**
Research student, supervised by Nandita Vijaykumar Toronto, ON, Canada

- Researched on novel methods for acceleration and edibility of neural radiance fields for scene representations.
- Developed CUDA accelerations kernels for GPU based point aggregations and differentiable physics based volume rendering.

PAIR Lab, Vector Institute **August 2021 – May 2022**
Research student, supervised by Animesh Garg Toronto, ON, Canada

- Researched on a novel method for robot to grasp and assemble objects using 3D computer vision.
- Designed a new simulation environment for 3D fractured object generations.

Publications

Haoda Li, Puyuan Yi, Yunhao Liu, Avideh Zakhor. "Scalable MAV Indoor Reconstruction with Neural Implicit Surfaces", *ICCV 2023 Workshop on Computer Vision Aided Architectural Design*, 2023

Ruofan Liang, Jiahao Zhang, **Haoda Li**, Chen Yang, Yushi Guan, Nandita Vijaykumar. "SPIDR: SDF-based Neural Point Fields for Illumination and Deformation", *CVPR 2023 Workshop on Advances in NeRF for the Metaverse*, 2023

Yun-Chun Chen, **Haoda Li**, Dylan Turpin, Alec Jacobson, Animesh Garg. "Neural Shape Mating: Self-Supervised Object Assembly with Adversarial Shape Priors", in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022

Varshanth R. Rao, Md Ibrahim Khalil, **Haoda Li**, Peng Dai, Juwei Lu. "Dual Perspective Network for Audio Visual Event Localization", in *European Conference on Computer Vision (ECCV)*, 2022

Varshanth R. Rao, Md Ibrahim Khalil, **Haoda Li**, Peng Dai, Juwei Lu. "Decompose the Sounds and Pixels, Recompose the Events", in *Confernce on Artificial Intelligence (AAAI)*, 2022

Teaching Experience

CSC417H1/CSC2549H Physics based Animation **2021 Fall**
Teaching Assistant with Prof. David I.W. Levin University of Toronto

CSC311H5 Introduction to Machine Learning **2021 Fall**
Teaching Assistant with Prof. Anthony Bonner University of Toronto

CSC317H1 Computer Graphics **2022 Winter**
Teaching Assistant with Prof. David I.W. Levin and Prof. Alec Jacobson University of Toronto

Honours and Awards

UC Berkeley MEng Fung Excellence Scholarship **August 2022**
Michael And Edward Dearden Scholarships **June 2022**
Alen Milne Mccombie Award **June 2022**
Dr. James A. & Connie P. Dickson Scholarship In Science & Mathematics **October 2020**
University College Special Admission Scholarships **September 2017**
Dean's List Scholar **2017–2021, all years**

Relevant Coursework

Computer Graphics: Physics-Based Animation; Geometry Processing; Virtual Reality and Immersive Computing; Computational Imaging; Parallel Computing

Computer Vision: Learning for 3D Vision; Visual Computing; Image Understanding; Digital Image Processing

Deep Learning: Neural Nets and Deep Learning; Probabilistic Learning and Reasoning; Machine Learning; Experimental Design for Machine Learning on Multimedia Data

Numerical Analysis: Numerical Methods; Nonlinaer Optimizations; Real Analysis; Differential Geometry