Yiheng Xie

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Education

B.Sc. Computer Engineering, Brown University
Graduation: May 2022
GPA: 4.0/4.0

Research

Brown Visual Computing *Project Lead* (Brown University)   **May 2021 – Present**

- Leading review project *Neural Fields in Visual Computing*, which surveys coordinate-based neural networks for representing continuous signals.
- **Publication** (Eurographics'22 STAR - under review): **Yiheng Xie**, Towaki Takikawa, Shunsuke Saito, Or Litany, Shiqin Yan, Numair Khan, Federico Tombari, James Tompkin, Vincent Sitzmann, Srinath Sridhar, *Neural Fields in Visual Computing*
- **Advisors:** Srinath Sridhar (Brown University), Vincent Sitzmann (MIT)

Unity Technologies *Researcher* (Tel Aviv, Israel)   **May 2020 – Present**

- Part-time, paid research position at Unity Digital Twin Group (formerly RestAR).
- Developed a production-ready mesh refinement algorithm via differentiable rasterization.
- Current research areas: differentiable rendering, BRDF material estimation.

HCRI Robotics Lab *Research Assistant* (Brown University)   **June 2019 – Present**

- Produced a 10k-line code repository, which implemented the group's previous work (*Teaching a Robot Tasks of Arbitrary Complexity via Human Feedback - HRI '20*) on a real-world robot.
- Current research direction: generalizable and explainable model-based reinforcement learning.
- **Advisor:** Michael L. Littman

LEHN Nanoscience Lab *Research Assistant* (Brown University)   **Dec 2018 – Dec 2020**

- Studied mechanical failure properties of 2D nanomaterials. Developed algorithms for analyzing tensile testing and optical spectroscopy data.
- **Publication** (Accepted to *Carbon*): Cintia J. Castilho, Dong Li, **Yiheng Xie**, Huajian Gao, Robert H. Hurt, *Shear failure in supported two-dimensional nanosheet van der Waals thin films*
- **Advisor:** Robert H. Hurt

Teaching

ENGN 0040 Dynamics and Vibrations (Brown University)   **June – Aug 2021**
- Teaching assistant. Hosted weekly office hours for homeworks and design projects.

CSCI 2952K 3D Computer Vision and Machine Learning (Brown University)   **Sept – Dec 2020**
- Teaching assistant for the graduate-level seminar course at Brown University. Hosted weekly literature review workshops and handled grading.

ENGN 1580 Communication Systems (Brown University)   **Jan – May 2020**
- Staff note-taker for the upper-level Computer Engineering elective.

Work Experience

AWS Ethos Hub *Part-time, Cloud Developer* (Providence, RI)   **Oct 2021 – Present**
- Developing a cloud-based solution to utility providers to accelerate the renewable energy transition.

Learnable *Group Lead* (Boston, MA)   **Jan – June 2020**
- Led a team of 5 engineers to implement an AI agent for grading K-12 math problems. Project involved seq2seq language models and a custom math logic engine. Product deployed in April 2020.

Auto-Intelligence *Intern, Deep Learning* (Shanghai, China)   **June– August 2018**
- Worked with full-time engineers to deliver an automated defect-detection solution for manufacturing clients. Project used state-of-the-art segmentation networks.

Service and Leadership

DEI (Diversity, Equity & Inclusion) Advisory Board (Westtown School)   **2018 – Present**
- Appointed by the Head of School to serve on an advisory board of trustees, faculty members and alumni. Formulated policies and initiatives on diversity, equity and inclusion at my alma mater.

Admissions Tour Guide (Brown University, Westtown School)
- Gave bilingual tours to prospective families at Westtown School, head of program.   **2017 – 2018**
- Gave weekly large group tours for prospective families at Brown University.   **Jun – Aug 2019**

Meiklejohn/MAPS Peer Advisor (Brown University)
- MAPS Mentor: Advised 2nd-year students in academic planning and major declaration.   **2020**
- Meiklejohn Peer Advisor: Collaborated with a faculty member, advised 1st-year students in navigating the academics and campus life.   **2019**

Awards

CMMRS Pre-doctoral Research School (Saarbrücken, Germany)   **2021**
- A selective, week-long, all-expenses paid summer research symposium hosted by Cornell, Maryland, the Max Planck Institute for prospective PhD students.

Brown-Connect Israel Entrepreneurship Signature Program (Brown University)   **2020**
- Awarded $4000 for an immersive summer internship in Israel.

Undergraduate Teaching and Research Award (Brown University)   **2019**
- Awarded $4,500 research stipend to pursue the 6-month research project at the LEHN Nanoscience Lab with Professor Robert Hurt. Publication accepted to *Carbon*.

Nelson Center for Entrepreneurship Synapse Barcelona Program (Brown University)   **2019**
- Part of a selective group of six students in an all-expenses-paid trip, visiting and connecting with entrepreneurs to explore the start-up culture in Barcelona, Spain.

Hazeltine Engineering Grant (Brown University)   **2019**
- Awarded $1000 project stipend for developing an IoT bike helmet with integrated safety features.

Innovation Grant (Westtown School) **2018**
- Awarded project stipend to build an IoT smart chicken coop for the 5th grade science curriculum at Westtown School. Project was featured in the *[Independent Seminar Series](#)*.

Alumni Association Highest Scholarship Award (Westtown School) **2018**
- Awarded to the top two students in grades 11-12.

Charles K. Brown III Math Award (Westtown School) **2018**
- Awarded to the top student in mathematics.

Peter Lane Math Award (Westtown School) **2018**
- Awarded to the student who have shown both excellence and a collaborative spirit in mathematics.

Kaesemeyer Leadership Award (Westtown School) **2017**
- The most prestigious award at Westtown School, for students who have demonstrated exemplary leadership in service to the community.