

# Yiheng Xie

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<https://yxie20.github.io/>

## SKILLS

### Programming Languages:

Python, MATLAB, Java, C, Verilog, x86-64, html/css, SQL

### Machine Learning:

Frameworks:

Tensorflow, PyTorch

Focus areas: vision, robotics, control, natural languages

### Cloud Computing:

AWS suite, GCP

### CAD Software:

SolidWorks, Adobe Suite, PADS PCB, Fusion 360

### Hardware Tools:

3D-print, laser-cut, machine shop tools

### Other Tools:

JIRA, Git, LaTeX

## SAMPLE COURSEWORK

### Computer Science:

Computer Systems  
Computer Vision  
Cybersecurity

### Engineering:

Electrical Circuits  
Digital IC Design (VLSI)  
Embedded Microprocessors

### Mathematics:

Honors Multi. Calculus  
Honors Linear Algebra  
Statistical Inference  
Linear Systems Analysis

### Energy Systems:

Energy and the Environment  
Env. Economics and Policy  
Algorithmic Game Theory

## LANGUAGES

English, Chinese, Spanish

## EDUCATION

Caltech | Pasadena, CA

2023 – 2028

- **Ph.D** Computation and Mathematical Sciences (admitted, on gap year)

Brown University | Providence, RI

2018 – 2022

- **B.Sc.** Computer Engineering (GPA: 3.97/4.00)

## WORK EXPERIENCE

Amazon Web Services *Cloud Developer* (Providence, RI)

2021 – Present

- Developing a cloud-based deep-learning solution to utility providers to increase the resilience of electrical grid during extreme weather events (RI ETHOS Hub).

Unity Technologies *Deep Learning Researcher* (Tel Aviv, Israel)

2020 – 2022

- Leading deep learning research at [Unity Digital Twin Group](#), focusing on 3D reconstruction, inverse rendering, BRDF material estimation.

Learnable Group *Lead* (Boston, MA)

2019 – 2020

- Led a team of 5 developers to develop a natural language processing algorithm for our [industry-leading auto-grader](#) for K-12 math and science exams.
- Product shipped in April 2020 and achieved over 99% accuracy in the 2021 Gaokao.

Auto-Intelligence *Intern* (Shanghai, China)

Summer 2018

- Delivered an automated defect-detection solution for a manufacturing client.

## RESEARCH

HCRI Robotics Lab (Brown University, Adv: Michael Littman)

2019 – 2022

- Project 1: Teaching tasks of arbitrary complexity via natural language feedback.
- Project 2: Sample-efficient reinforcement learning.
- **Publication:** [Learning Generalizable Behavior via Visual Rewrite Rules](#), first author.

Brown Visual Computing (Brown University, Adv: Srinath Sridhar)

2020 – 2022

- Leading review project surveying 250+ papers on an emerging trend in visual computing.
- **Publication:** [Neural Fields in Visual Computing](#), first author.

LEHN Nanoscience Lab (Brown University, Adv: Robert Hurt)

2018 – 2020

- Studied mechanical properties of 2D nanomaterials. Proposed an entirely novel research methodology for analyzing and visualizing tensile testing data.
- **Publication:** [Shear failure in supported two-dimensional nanosheet van der Waals films](#)

## SERVICE AND LEADERSHIP

Westtown School Diversity, Equity & Inclusion Board Member

2018 – 2021

- Appointed by the Head of School to serve on an advisory board of trustees, alumni and faculty members. Formulated high-level policies and initiatives at my high school.

Admissions Tour Guide (Brown University, Westtown School)

2016 – 2019

- Gave bilingual tours to prospective families, head of program (Westtown School).
- Gave weekly tours to large groups of prospective families (Brown University).

Teaching Assistant (Brown University)

2020 – 2021

- CSCI 2952K: Hosted office hours for the graduate-level 3D computer vision seminar.
- ENGN 0040: Hosted office hours for homework and design project support.
- ENGN 1580: Staff note-taker for the upper-level elective (Communication Systems).