

# Wanjia Fu

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## EDUCATION

### Brown University

Providence, RI | **Expected Graduation May 2026**

*Expected Sc.B in Computer Science and A.B in Applied Mathematics*

• Relevant Courses: (*grade: A*): Learning and Sequential Decision Making, Reintegrating AI, Research Topics in Self-Supervised Learning (expected), Human-AI Interaction (expected), Advanced Topics in Deep Learning, Deep Learning, Computer Vision, Probabilistic Methods in CS, Computer Graphics, Computer Networks, Design/Analysis of Algorithms, Introduction to Software Engineering (*grade: S\**), Real Analysis, Operations Research: Probabilistic Models, Recent Applications of Prob/Stat, Computational Probabilities and Statistics, Intro Computational Linear Algebra, Applied Partial Differential Equations

## RESEARCH

### Unitac: Whole-Robot Touch Sensing Without Tactile Sensors (*under review*)

Providence, RI | **Nov 2024 – Mar 2025**

- Present a data-driven model, UniTac, that leverages built-in joint torque sensors to achieve live whole-body touch sensing across various robot platforms, eliminating the need for dedicated tactile sensors
- UniTac demonstrates generalizability across multiple robot instances with the same type, allowing a wider community to use it as an off-the-shelf interface directly
- Demonstrate potential applications in touch-based human-robot interaction, including bio-inspired quadruped choreography

### (CVPR 2025) GigaHands: A Massive Annotated Dataset of Bimanual Hand Activities

Providence, RI | **Jul - Nov 2024**

- Generated contact heat map across bimanual hand-object and hand-hand activities of diverse scenes
- Synchronized RGB videos across in the Brown Interactive Capture Systems for 2D, 3D key points and MANO model fitting
- Collected data for the GigaHands dataset, which consist of more than forty actions with text annotations
- Tried to implement 3D Dynamic Gaussian Splatting on the multi-view camera data of scenes

### Shape-Based Skill Transfer, *Undergrad Research Assistant at Intelligent Robotics Lab*

Providence, RI | **Aug 2023 – Aug 2024**

- Learned latent representations of object parts for mugs and spatulas to carry out pouring and scooping tasks, and tried to learn a robust skill for all shapes of the same object category, with advisor Dr. George Konidaris
- Worked on ROS and reinforcement learning, Boston Dynamics Spot robots, and KUKA robotic arms with radar cameras

## INTERNSHIP & ON CAMPUS EMPLOYMENT

### Pinhole Camera Models, *Software Engineering Intern at Brown Visual Computing*

Providence, RI | **June 2023 - Aug 2023**

- Employed front-end and back-end development with Three.js, Javascript, HTML, and CSS to create an online website tutorial on camera projection and perspective projection for the class Computer Vision for Dr. James Tompkin
- Improved upon two existing online tutorials on affine transformations and the fundamental matrix for course development

### Brown Visual Computing, *Undergraduate Teaching Assistant; Head Teaching Assistant*

Providence, RI | **Jan 2024 - Dec 2024**

- Helped design and develop course material, improved its webpage on a biannual basis, managed organization Github repository, upgraded Gradescope autograders, maintained assignment code management
- Graded and attended TA Hours and ED Hours for projects on image filtering, feature matching, camera geometry, scene classification, convolutional neural network, and a computer vision final project

### Hydsoft Technology Co. Ltd., *Product Operation Intern*

Shanghai, China | **May 2023 - Jun 2023**

- Designed AI customer service to improve plane ticket booking system based on Baidu UNIT and natural language processing
- Designed front-end poster layout and user interface in a 10-member team for China Mobile Smart Card Production Platform
- Received the PaddlePaddle AI Technical Engineer Certificate as Intelligent Customer Service Engineer by Baidu AI Cloud

## AWARDS & SKILLS

**Awards:** Pathways@RSS 2025 Fellowship, CVPR 2025 Travel Support Award, First Place Award at 10<sup>th</sup> Annual Brown CS

Research Symposium, Randy Pausch Undergraduate Research Fellowship, Advanced Undergrad Research SPRINT Fellowship

**Technical Skills:** (fluent) Python, HTML, CSS; (experience) Java, C++, C, Typescript, Javascript, WebGL, OpenGL, Golang, React

**Language:** Trilingual proficiency in English, Spanish (Awarded C1 by El Instituto Cervantes), Chinese

## ACTIVITIES & LEADERSHIP EXPERIENCE

### Brown IgniteCS, *Member*

Providence, RI | **Sept 2023 – May 2024**

- Designed and developed a series of courses related to AI and taught as guest lecturer at Nathanael Greene Middle School
- Designed and developed the coding club on HTML, CSS at the Sophia Academy coding club for 1.5 hours per week

### Brown Moli East Asian Dance Company, *Co-Secretary Chair; Co-Director*

Providence, RI | **May 2022 – now(ongoing)**

- Organized members, logistics, and finance for the club, prepare for annual spring show, teach Chinese dances