XINGJIAN (JESSIE) HAN

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EDUCATION

Boston University — Sept 2019 - May 2025 (expected)
- Ph.D Candidate in Computer Science; GPA: 3.8/4.0

The University of Manchester — Oct 2023 - Oct 2024
- Visiting Ph.D. in Mechanical and Aerospace Engineering

University of California, Berkeley — Aug 2016 - Aug 2018
- Bachelor of Arts (B.A.), Mathematics; GPA: 3.5/4.0

Bellevue College — Sept 2014 - June 2016
- Associate of Arts and Sciences DTA with High Distinction; GPA: 3.96/4.0

PUBLICATION

[1] **Xingjian Han***, Yu Jiang* (equal contributions), Weiming Wang, Guoxin Fang, Simeon Gill, Zhiqiang Zhang, Shengfa Wang, Jun Saito, Deepak Kumar, Zhongxuan Luo, Emily Whiting, Charlie C.L. Wang, "Motion-Driven Neural Optimizer for Prophylactic Braces Made by Distributed Microstructures", ACM SIGGRAPH Asia 2024.

[2] Yuming Huang*, Yuhu Guo*(equal contributions), Renbo Su, **Xingjian Han**, Junhao Ding, Tianyu Zhang, Tao Liu, Weiming Wang, Guoxin Fang, Xu Song, Emily Whiting, Charlie C.L. Wang, "Learning Based Toolpath Planner on Diverse Graphs for 3D Printing", ACM SIGGRAPH Asia 2024.

[3] **Xingjian Han**, Benjamin Senderling, Stanley To, Deepak Kumar, Emily Whiting, Jun Saito, "GroundLink: A Dataset Unifying Human Body Movement and Ground Reaction Dynamics", ACM SIGGRAPH Asia 2023.

[4] Zishun Liu, **Xingjian Han**, Yuchen Zhang, Xiangjia Chen, Yukun Lai, Eugeni L. Doubrovski, Emily Whiting, Charlie C.L. Wang, "Knitting 4D Garments with Elasticity Controlled for Body Motion", ACM SIGGRAPH 2021.

EXPERIENCE

Boston University, *Shape Design & Computation Lab, Department of Computer Science* — Boston, MA
Research Assistant, Supervisor: Prof. Emily Whiting — Sept 2019-present

GroundLink: A Dataset Unifying Human Body Movement and Ground Reaction Dynamics
- Present a unified dataset comprised of captured ground reaction force (GRF) and center of pressure (CoP) synchronized to standard kinematic motion captures to provide streamline for character animation usage. Published in SIGGRAPH Asia 2023.

Knitting 4D Garments with Elasticity Controlled for Body Motion
- Proposed a computational pipeline for designing and fabricating customized tight-fitting knitted garments with elasticity control that consider human comfort during motion. Published in SIGGRAPH 2021.

FlexPal LTD. (startup company) — Manchester, UK
Researcher — June 2024-Jan 2025

Soft Robotics Applications in Cognitive and Perceptual Technologies
- Introduced personal companion soft robot, presented the physical demo at Siemens Transform 2024 Conference.

The University of Manchester, *Digital Manufacturing Lab* — Manchester, UK
Research Assistant, Supervisor: Prof. Charlie C.L. Wang — Oct 2023-Sept 2024

Motion-Driven Neural Optimizer for Prophylactic Braces Made by Distributed Microstructures
- Proposed a motion-driven neural optimization framework to craft personalized braces that aim to prevent joint injuries while maintaining movement mobility. Published in SIGGRAPH Asia 2024.

Learning Based Toolpath Planner on Diverse Graphs for 3D Printing
- Present a reinforcement learning based on-the-fly planner to generate optimized 3D printing toolpaths on diverse graphs for the applications of wire-frame printing, continuous carbon fiber printing and metallic printing. Published in SIGGRAPH Asia 2024.

Adobe Inc., *Creative Intelligence Lab, Adobe Research*   Boston (Remote), MA
Research Intern, Supervisors: Jun Saito, Ruben Villegas   June 2021-Nov 2021

    Learn Physics of Human Motion
- Conducted machine learning based animation research for character control. Adopted recurrent mode-adaptive neural networks for motion synthesis with foot contact to improve physics details. Extended to publication.

University of Pennsylvania, *SIG Center for Computer Graphics*   Philadelphia, PA
Research Intern, Supervisor: Prof. Chenfanfu Jiang   May 2018-March 2019

    Micropolar APIC Method for Turbulent Fluid
- Proposed to simulate turbulent fluid with Micropolar model based on Affine Particle in Cell (APIC) transfer, creating a more realistic and energetic rotational flow.

Phoebe A. Hearst Museum of Anthropology, *UC Berkeley*   Berkeley, CA
Modeling/VR Development Assistant, Supervisor: Dr. Christopher Hoffman   Jan 2018-May 2018

    HeartCAVE 3D Reconstruction
- Developed a multi-platform VR interface for a digital museum experience. Adopted photogrammetry to create and integrated 3D exhibitions models into the HearstCAVE VR. Partnered with Mingei International Museum (UCSD) and UC campuses to enhance museum accessibility and foster immersive, flexible user interactions.

UC Berkeley, *Department of Electrical Engineering and Computer Science*   Berkeley, CA
Research Assistant, Supervisor: Prof. Carlo H. Sequin   Sept 2017-May 2018

    Sculpture Design and Math Models
- Employed various CAD tools (Maya, Blender, Rhino) for the procedural generation of 2-Manifold sculpture geometries, capturing and modifying the features of sculpture work from ceramists (Eva Hild and Charles O. Perry) to create more generalized functions for the design of 2-manifold free-form surfaces.

MapsReo LLC. (startup company)   Berkeley, CA
Technical Manager and Co-Founder   July 2017-March 2018

    MapsReo
- Co-directed the design and development of *MapsReo*, a location-based social application promoting safe community interactions and reflecting local lifestyles. Led the technical team and collaborated with the ASUC student senator to promote adoption within the University of California community.

INVITED TALK

"Knitting 4D Garments with Elasticity Controlled for Body Motion"   April 2024
Apparel Design Engineering Lab, The University of Manchester   *Manchester, UK*
"Computational Design for Human Body Movements"   Jan 2025
Sports Research Lab, New Balance Athletics, Inc.   *Boston, MA*

SERVICES

Technical paper reviewer for ACM SIGGRAPH, ACM SIGGRAPH Asia, Computer Graphics Forum

TEACHING

CS 131 Combinatoric Structures, Teaching Assistant, Boston University   Summer 2023
CS 581 Computational Fabrication, Teaching Assistant, Boston University   Spring 2022
CS 132 Geometric Algorithm, Guest Lecturer, Teaching Assistant, Boston University   Spring 2021
CS 237 Probability in Computing, Teaching Assistant, Boston University   Fall 2020

SKILLS

Computer Graphics/Animation Pipelines: Character Animation, Physics-based Simulation, Geometric Processing
Programming/Database: Python, **PyTorch**, C++, Java, Objective-C, Matlab, SQL, Git
VFX/Film and Game Production: Autodesk Maya, SideFX Houdini, Unity, Epic Games Unreal Engine, etc