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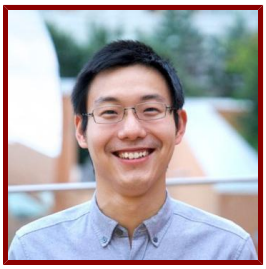

Jiajun Wu

Assistant Professor of Computer Science and, by courtesy, of Psychology

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BIO

Jiajun Wu is an Assistant Professor of Computer Science and, by courtesy, of Psychology at Stanford University, working on computer vision, machine learning, robotics, and computational cognitive science. Before joining Stanford, he was a Visiting Faculty Researcher at Google Research. He received his PhD in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology. Wu's research has been recognized through the IJCAI Computers and Thought Award, the Young Investigator Programs (YIP) by ONR and by AFOSR, the NSF CAREER award, the Okawa research grant, the AI's 10 to Watch by IEEE Intelligent Systems, paper awards and finalists at ICCV, CVPR, SIGGRAPH Asia, ICRA, CoRL, and IROS, dissertation awards from ACM, AAAI, and MIT, the 2020 Samsung AI Researcher of the Year, and faculty research awards from Microsoft, Google, Nvidia, J.P. Morgan, Samsung, Amazon, and Meta.

ACADEMIC APPOINTMENTS

- Assistant Professor, Computer Science
- Assistant Professor (By courtesy), Psychology
- Member, Bio-X
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Computers and Thought Award, IJCAI (2026)
- Faculty Fellowship, Microsoft Research (2026)
- Academic Grant, Nvidia (2025)
- Research Scholar Award, Google (2025)
- Best Paper Award Finalist, ICRA, IEEE (2025)
- Research Grant, Okawa Foundation (2024)

- CAREER Award, NSF (2024)
- Young Investigator Program (YIP), ONR (2024)
- AI's 10 to Watch, IEEE Intelligent Systems (2024)
- Best Paper Award, ICRA, IEEE (2024)
- Innovators Under 35 Asia Pacific, MIT Technology Review (2024)
- Young Investigator Program (YIP), AFOSR (2023)
- Best Paper Award, SIGGRAPH Asia, ACM (2023)
- Best Systems Paper Award, CoRL (2023)
- Best Paper Award Finalist, ICCV, IEEE/CVF (2023)
- Best Paper Award Candidate, CVPR, IEEE/CVF (2023)
- Global Research Outreach (GRO) Award, Samsung (2023)
- New Faculty Highlights, AAAI (2023)
- Best Paper Award Nominee, CoRL (2022)
- Faculty Research Award, J.P. Morgan (2022)
- 30 Under 30, Science, Forbes (2022)
- Early Career Professor Award Finalist, Agilent (2022)
- Research Award, Meta (2021)
- Research Award, Amazon (2021)
- AI Researcher of the Year, Samsung (2020)
- Global Research Outreach (GRO) Award, Samsung (2020)
- George M. Sprowls PhD Thesis Award in Artificial Intelligence and Decision-Making, MIT (2020)
- Doctoral Dissertation Award Honorable Mention, ACM (2019)
- Dissertation Award, AAAI/ACM SIGAI (2019)
- PhD Fellowship, Facebook (2017--2019)
- Best Paper Award on Cognitive Robotics, IROS, IEEE/RSJ (2018)
- PhD Fellowship, Samsung (2016--2017)
- Graduate Fellowship, Nvidia (2016--2017)
- Research Fellowship, Adobe (2015)
- Edwin S. Webster Fellowship, MIT (2014)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance
- Symbolic Systems Program

PROFESSIONAL EDUCATION

- Ph.D., MIT , EECS
- S.M., MIT , EECS

LINKS

- Personal Site: https://jiajunwu.com/
- Google Scholar: https://scholar.google.com/citations?user=2efgcS0AAAAJ&hl=en&oi=ao

- DBLP: https://dblp.dagstuhl.de/pid/117/4768.html

Teaching

COURSES

2025-26

- Minds and Machines: CS 24, LINGUIST 35, PHIL 99, PSYCH 35, SYMSYS 1, SYMSYS 200 (Spr)

2024-25

- Minds and Machines: CS 24, LINGUIST 35, PHIL 99, PSYCH 35, SYMSYS 1, SYMSYS 200 (Win)

2023-24

- Computer Graphics in the Era of AI: CS 348I (Win)
- Minds and Machines: CS 24, LINGUIST 35, PHIL 99, PSYCH 35, SYMSYS 1, SYMSYS 200 (Win)

2022-23

- Minds and Machines: CS 24, LINGUIST 35, PHIL 99, PSYCH 35, SYMSYS 1, SYMSYS 200 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Joao Araujo, Hyunwoo Gu, Zhengfei Kuang, Wanhee Lee, Rahul Venkatesh, Keenon Werling, Sharon Zhang, Ivmin Zhang

Postdoctoral Faculty Sponsor

Zhanpeng He, Huang Huang, Yiqing Xu

Orals Evaluator

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Master's Program Advisor

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Eric Chan, Cristobal Eyzaguirre, Arushi Gupta, Emily Jin, Chaitanya Patel, Adam Sun, Alexa Tartaglini

Doctoral (Program)

Ziyu Chen, Chen Geng, Zizhang Li, Kyle Sargent, Jeff Tan, Yanjie Ze

Publications

PUBLICATIONS

- **Discovering Hybrid World Representations with Co-Evolving Foundation Models**
  Wu, J., Zhang, Y., Yu, H., Hsu, J., Mao, J.
  edited by Koenig, S., Jenkins, C., Taylor, M. E.
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2026: 41020-41024
- **A review of learning-based dynamics models for robotic manipulation.** *Science robotics*
  Ai, B., Tian, S., Shi, H., Wang, Y., Pfaff, T., Tan, C., Christensen, H. I., Su, H., Wu, J., Li, Y.

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- **WonderWorld: Interactive 3D Scene Generation from a Single Image**
  Yu, H., Duan, H., Herrmann, C., Freeman, W. T., Wu, J., IEEE COMPUTER SOC
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- **The Scene Language: Representing Scenes with Programs, Words, and Embeddings**
  Zhang, Y., Li, Z., Zhou, M., Wu, S., Wu, J., IEEE COMPUTER SOC
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- **Birth and Death of a Rose**
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- **Physical scene understanding** *AI MAGAZINE*
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- **Neurosymbolic Models for Computer Graphics** *COMPUTER GRAPHICS FORUM*
  Ritchie, D., Guerrero, P., Jones, R., Mitra, N. J., Schulz, A., Willis, K. D. D., Wu, J.
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- **REALIMPACT: A Dataset of Impact Sound Fields for Real Objects**
  Clarke, S., Xu, J., Gao, R., Wang, J., Wang, M., James, D. L., Rau, M., Wu, J., IEEE
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- **RoboCook: Long-Horizon Elasto-Plastic Object Manipulation with Diverse Tools**
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- **Seeing a Rose in Five Thousand Ways**
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- **OBJECTFOLDER 2.0: A Multisensory Object Dataset for Sim2Real Transfer**
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- **3D Shape Generation and Completion through Point-Voxel Diffusion**
  Zhou, L., Du, Y., Wu, J., IEEE
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- **Visual Dynamics: Stochastic Future Generation via Layered Cross Convolutional Networks** *IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE*
  Xue, T., Wu, J., Bouman, K. L., Freeman, W. T.
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- **Learning a Probabilistic Latent Space of Object Shapes via 3D Generative-Adversarial Modeling**
  Wu, J., Zhang, C., Xue, T., Freeman, W. T., Tenenbaum, J. B.
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  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016
- **Galileo: Perceiving Physical Object Properties by Integrating a Physics Engine with Deep Learning**
  Wu, J., Yildirim, I., Lim, J. J., Freeman, W. T., Tenenbaum, J. B.
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- **3D Congealing: 3D-Aware Image Alignment in the Wild**
  Zhang, Y., Li, Z., Raj, A., Engelhardt, A., Li, Y., Hou, T., Wu, J., Jampani, V.
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  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 387-404

- **Understanding Complexity in VideoQA via Visual Program Generation**
  Eyzaguirre, C., Vasiljevic, I., Dave, A., Wu, J., Ambrus, R., Kollar, T., Niebles, J., Tokmakov, P.
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  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 15613-15636

- **Generalizable Humanoid Manipulation with 3D Diffusion Policies**
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- **Why Is Spatial Reasoning Hard for VLMs? An Attention Mechanism Perspective on Focus Areas**
  Chen, S., Zhu, T., Zhou, R., Zhang, J., Gao, S., Niebles, J., Geva, M., He, J., Wu, J., Li, M.
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  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 9910-9932

- **TWIST: Teleoperated Whole-Body Imitation System**
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  Jiang, Y., Zhang, R., Wong, J., Wang, C., Ze, Y., Yin, H., Gokmen, C., Song, S., Wu, J., Li Fei-Fei
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  IEEE COMPUTER SOC.2025: 29469-29478

- **Lifting Motion to the 3D World via 2D Diffusion**
  Li, J., Liu, C., Wu, J., IEEE COMPUTER SOC
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  Deng, Y., Zhang, Y., Geng, C., Wu, S., Wu, J.
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- **Re-thinking Temporal Search for Long-Form Video Understanding**
  Ye, J., Wang, Z., Sun, H., Chandrasegaran, K., Durante, Z., Eyzaguirre, C., Bisk, Y., Niebles, J., Adeli, E., Li Fei-Fei, Wu, J., Li, M., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 8579-8591

- **Category-Agnostic Neural Object Rigging**
  He, G., Geng, C., Wu, S., Wu, J., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 22078-22088

- **PGC: Physics-Based Gaussian Cloth from a Single Pose**
  Guo, M., Chiang, M., Santesteban, I., Sarafianos, N., Chen, H., Halimi, O., Bozic, A., Saito, S., Wu, J., Liu, C., Stuyck, T., Larionov, E., IEEE COMPUTER SOC
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- **Diffusion Self-Distillation for Zero-Shot Customized Image Generation**
  Cai, S., Chan, E., Zhang, Y., Guibas, L., Wu, J., Wetzstein, G., IEEE COMPUTER SOC
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- **Digital Twin Catalog: A Large-Scale Photorealistic 3D Object Digital Twin Dataset**
  Dong, Z., Chen, K., Lv, Z., Yu, H., Zhang, Y., Zhang, C., Zhu, Y., Tian, S., Li, Z., Moffatt, G., Christofferson, S., Fort, J., Pan, et al
  IEEE COMPUTER SOC.2025: 753-763

- **UAD: Unsupervised Affordance Distillation for Generalization in Robotic Manipulation**
  Tang, Y., Huang, W., Wang, Y., Li, C., Yuan, R., Zhang, R., Wu, J., Li Fei-Fei
  edited by Ott, C.
  IEEE.2025: 3822-3831

- **CRAFT: Designing Creative and Functional 3D Objects**
  Guo, M., Tang, M., Cha, H., Zhang, R., Liu, C., Wu, J., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 7215-7224

- **Controllable Human-Object Interaction Synthesis**
  Li, J., Clegg, A., Mottaghi, R., Wu, J., Puig, X., Liu, C.
  edited by Leonardis, A., Ricci, E., Roth, S., Russakovsky, O., Sattler, T., Varol, G.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 54-72

- **PhysDreamer: Physics-Based Interaction with 3D Objects via Video Generation**
  Zhang, T., Yu, H., Wu, R., Feng, B. Y., Zheng, C., Snavely, N., Wu, J., Freeman, W. T.
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- **Reconstruction and Simulation of Elastic Objects with Spring-Mass 3D Gaussians**
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  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 407-423

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  Sun, K., Litvak, D., Zhang, Y., Li, H., Wu, J., Wu, S.
  edited by Roth, S., Russakovsky, O., Sattler, T., Varol, G., Leonardis, A., Ricci, E.
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- **MOTIVATING INFORMATION-SEEKING BEHAVIORS FOR NEW TECHNOLOGY ACROSS THE LIFE SPAN**
  Chu, L., Patterson, K., Kim, T., Srivastava, S., Zhang, R., Wu, J., Li, F., Carstensen, L.
  OXFORD UNIV PRESS.2024: 647

- **DAILY AND TECHNOLOGICAL CHALLENGES AND NEEDS IN OLDER AGES: A MIXED METHODS STUDY**
  Cruz, M., Chu, L., Gomezjurado Gonzalez, L., Zhang, R., Wu, J., Fei-Fei, L., Carstensen, L.
  OXFORD UNIV PRESS.2024

- **An Eulerian Vortex Method on Flow Maps** *ACM TRANSACTIONS ON GRAPHICS*
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- **Partial-View Object View Synthesis via Filtering Inversion**
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  IEEE COMPUTER SOC.2024: 453-463
- **Learning the 3D Fauna of the Web**
  Li, Z., Litvak, D., Li, R., Zhang, Y., Jakab, T., Rupprecht, C., Wu, S., Vedaldi, A., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 9752-9762
- **ZeroNVS: Zero-Shot 360-Degree View Synthesis from a Single Image**
  Sargent, K., Li, Z., Shah, T., Herrmann, C., Yu, H., Zhang, Y., Chan, E., Lagun, D., Li Fei-Fei, Sun, D., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 9420-9429
- **WonderJourney: Going from Anywhere to Everywhere**
  Yu, H., Duan, H., Hur, J., Sargent, K., Rubinstein, M., Freeman, W. T., Cole, F., Sun, D., Snavely, N., Wu, J., Herrmann, C., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2024: 6658-6667
- **DiffSound: Differentiable Modal Sound Rendering and Inverse Rendering for Diverse Inference Tasks**
  Jin, X., Xu, C., Gao, R., Wu, J., Wang, G., Li, S., Spencer, S.
  ASSOC COMPUTING MACHINERY.2024
- **CityPulse: Fine-Grained Assessment of Urban Change with Street View Time Series**
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- **Efficient Imitation Learning with Conservative World Models**
  Kolev, V., Rafailov, R., Hatch, K., Wu, J., Finn, C.
  edited by Abate, A., Cannon, M., Margellos, K., Papachristodoulou, A.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2024: 1776-1789
- **Learning to Design 3D Printable Adaptations on Everyday Objects for Robot Manipulation**
  Guo, M., Liu, Z., Tian, S., Xie, Z., Wu, J., Liu, C., IEEE
  IEEE.2024: 824-830
- **WonderJourney: Going from Anywhere to Everywhere**
  Yu, H., Duan, H., Hur, J., Sargent, K., Rubinstein, M., Freeman, W. T., Cole, F., Sun, D., Snavely, N., Wu, J., Herrmann, C., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2024: 6658-6667
- **Naturally Supervised 3D Visual Grounding with Language-Regularized Concept Learners**
  Feng, C., Hsu, J., Liu, W., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 13269-13278
- **HOLODECK: Language Guided Generation of 3D Embodied AI Environments**
  Yang, Y., Sun, F., Weihs, L., Vanderbilt, E., Herrasti, A., Han, W., Wu, J., Haber, N., Krishna, R., Liu, L., Callison-Burch, C., Yatskar, M., Kembhavi, et al
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- **BEHAVIOR Vision Suite: Customizable Dataset Generation via Simulation**
  Ge, Y., Tang, Y., Xu, J., Gokmen, C., Li, C., Ai, W., Martinez, B., Aydin, A., Anvari, M., Chakravarthy, A. K., Yu, H., Wong, J., Srivastava, et al
  IEEE COMPUTER SOC.2024: 22401-22412

- **Open X-Embodiment: Robotic Learning Datasets and RT-X Models**
  O'Neill, A., Rehman, A., Gupta, A., Maddukuri, A., Gupta, A., Padalkar, A., Lee, A., Pooley, A., Gupta, A., Mandlekar, A., Jain, A., Tung, A., Bewley, et al
  IEEE.2024: 6892-6903

- **Hearing Anything Anywhere**
  Wang, M., Sawata, R., Clark, S., Gao, R., Wu, S., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 11790-11799

- **Learning the 3D Fauna of the Web**
  Li, Z., Litvak, D., Li, R., Zhang, Y., Jakab, T., Rupprecht, C., Wu, S., Vedaldi, A., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 9752-9762

- **ZeroNVS: Zero-Shot 360-Degree View Synthesis from a Single Image**
  Sargent, K., Li, Z., Shah, T., Herrmann, C., Yu, H., Zhang, Y., Chan, E., Lagun, D., Li Fei-Fei, Sun, D., Wu, J., IEEE
  IEEE COMPUTER SOC.2024: 9420-9429

- **SkyScript: A Large and Semantically Diverse Vision-Language Dataset for Remote Sensing**
  Wang, Z., Prabha, R., Huang, T., Wu, J., Rajagopal, R.
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- **ULIP-2: Towards Scalable Multimodal Pre-training for 3D Understanding**
  Xue, L., Yu, N., Zhang, S., Panagopoulou, A., Li, J., Martin-Martin, R., Wu, J., Xiong, C., Xu, R., Niebles, J., Savarese, S., IEEE Comp Soc
  IEEE COMPUTER SOC.2024: 27081-27091

- **Physically Grounded Vision-Language Models for Robotic Manipulation**
  Gao, J., Sarkar, B., Xia, F., Xiao, T., Wu, J., Ichter, B., Majumdar, A., Sadigh, D., IEEE
  IEEE.2024: 12462-12469

- **CityPulse: Fine-Grained Assessment of Urban Change with Street View Time Series**
  Huang, T., Wu, Z., Wu, J., Hwang, J., Rajagopal, R.
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  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2024: 22123-22131

- **DiffSound: Differentiable Modal Sound Rendering and Inverse Rendering for Diverse Inference Tasks**
  Jin, X., Xu, C., Gao, R., Wu, J., Wang, G., Li, S., Spencer, S.
  ASSOC COMPUTING MACHINERY.2024

- **RoboCraft: Learning to see, simulate, and shape elasto-plastic objects in 3D with graph networks** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
  Shi, H., Xu, H., Huang, Z., Li, Y., Wu, J.
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- **Object Motion Guided Human Motion Synthesis** *ACM TRANSACTIONS ON GRAPHICS*
  Li, J., Wu, J., Liu, C.
  2023; 42 (6)

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