

EDUCATION

- Stanford University** Palo Alto, CA
Student of New Faculty, Electrical Engineering Aug 2023 - Present
- Columbia University** New York, NY
Ph.D. in Computer Science, GPA: 4.00 Sep 2021 - Present
- Columbia University** New York, NY
B.S. in Computer Science, GPA: 3.86, Cum Laude Sep 2017–May 2021
- *Selected Coursework*: Computational Learning Theory, Computational Complexity, Quantum Computing, Physically Based Computer Animation, Computer Graphics, 3D UI and Augmented Reality, Operating Systems, Representation Learning, Foundations of Graphical Models, Computation and the Brain, Evolutionary Computation, Causal Inference
 - *Dean's List*: Fall 2017, Spring 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021

PUBLICATIONS

- Self-Improving Autonomous Underwater Manipulation*
Ruoshi Liu, **Huy Ha**, Mengxue Hou, Shuran Song, Carl Vondrick
2025 *International Conference on Robotics and Automation*, [Webpage](#)
- UMI on Legs: Making Manipulation Policies Mobile with Manipulation-Centric Whole-body Controllers*
Huy Ha*, Yihuai Gao*, Zipeng Fu, Jie Tan, Shuran Song
2024 *Conference on Robot Learning*, **Spotlight Presentation** 2024 *Whole-body Control and Bimanual Manipulation Workshop*, 2024 *X-Embodiment Workshop*, [Webpage](#)
- Dynamics-Guided Diffusion Model for Robot Manipulator Design*
Xiaomeng Xu, **Huy Ha**, Shuran Song
2024 *Conference on Robot Learning*, **Best Machine Learning Paper** 2024 *Morphology-Aware Policy and Design Learning Workshop*, [Webpage](#)
- DROID: A Large-Scale In-the-Wild Robot Manipulation Dataset*
Alexander Khazatsky*, Karl Pertsch* et al.
2024 *Robotics: Science and Systems*, [Webpage](#)
- PaperBot: Learning to Design Real-World Tools Using Paper*
Ruoshi Liu, Junbang Liang, Sruthi Sudhakar, **Huy Ha**, Cheng Chi, Shuran Song, Carl Vondrick
2024 *Pre-print*, [Webpage](#)
- Scaling Up and Distilling Down: Language-Guided Robot Skill Acquisition*
Huy Ha, Pete Florence, Shuran Song
2023 *Conference on Robot Learning*, **Oral Presentation** 2023 *LangRob Workshop*, **Oral Presentation** 2023 *Cognitive Science and Robot Learning Workshop*, [Webpage](#)
- Motion Prediction For Chaotic Scenes in a Physical World*
Ishaan Chandratreya, **Huy Ha**, Simon Stent, Pavel Tokmakov, Shuran Song, Carl Vondrick
2023 *Pre-print*, Patent Pending
- Cloth Funnels: Canonicalized-Alignment for Multi-Purpose Garment Manipulation*
Alper Canberk, Cheng Chi, **Huy Ha**, Benjamin Burchfiel, Eric Cousineau, Siyuan Feng, Shuran Song
2023 *International Conference on Robotics and Automation*, [Webpage](#)

Bag All You Need: Learning a Generalizable Bagging Strategy for Heterogeneous Objects
Arpit Bahety, Shreeya Jain, **Huy Ha**, Nathalie Hager, Benjamin Burchfiel, Eric Cousineau, Siyuan Feng, Shuran Song
2023 *International Conference on Intelligent Robots and Systems*, [Webpage](#)

Semantic Abstraction: Open-World 3D Scene Understanding from 2D Vision-Language Models
Huy Ha, Shuran Song
2022 *Conference on Robot Learning*, [Webpage](#)

FlingBot: The Unreasonable Effectiveness of Dynamic Manipulations for Cloth Unfolding
Huy Ha, Shuran Song
2021 *Conference on Robot Learning*, **Oral Presentation, Best System Paper** [Webpage](#)

Learning a Decentralized Multi-arm Motion Planner
Huy Ha, Jingxi Xu, Shuran Song
2020 *Conference on Robot Learning*, [Webpage](#)

Fit2Form: 3D Generative Model for Robot Gripper Form Design
Huy Ha*, Shubham Agrawal*, Shuran Song
2020 *Conference on Robot Learning*, [Webpage](#)

*indicates equal contribution

HONORS AND AWARDS

Best Machine Learning Paper , Morphology-Aware Policy and Design Learning Workshop	Nov 2024
Ph.D. Communication Competition Finalist , Amazon Robotics	Oct 2024
Ph.D. Computer Science Service Award , Columbia University	May 2023
Best System Paper Award , Conference on Robot Learning	Nov 2021
Theodore R. Bashkow Award , Columbia University	Apr 2021
Dean's Fellow , Columbia University	Feb 2021
Bonomi Summer Scholars , Columbia University	May 2020
National Highest Score in Mathematics , Cambridge International A Levels	June 2017
National Highest Composite Score , Cambridge International A Levels	June 2016
Best Presentation Paper , International Symposium on Frontiers in Materials Science	Nov 2016
Silver , UK Maths Challenge Senior	Oct 2016

INVITED TALKS

RoboPIL , Columbia University	New York, NY, Feb 2025
University of Macau	Macau, China, Feb 2025
Robotics Labs , Northeastern University	Boston, MA, Oct 2024
Google DeepMind	Mountain View, CA, Oct 2024
Stanford Vision Lab	Palo Alto, CA, Sep 2024
Towards Generalist Robots Workshop, CoRL 2023	Atlanta, GA, Nov 2023
Google DeepMind	Mountain View, CA, Aug 2023
GRASP Lab	Philadelphia, PA, Jan 2022
Columbia Robotics Club	New York, NY, Oct 2021

RESEARCH EXPERIENCE

Robotics & Embodied Artificial Intelligence Lab (REAL)

Advised by Professor Shuran Song

Palo Alto, CA, New York, NY

Oct 2019 - Present

Computer Graphics and User Interfaces Laboratory

Supervised by Carmine Elvezio

New York, NY

Jan 2019-May 2019

Vietnam National University

Supervised by Professor Long Dang

Hanoi, Vietnam

Apr 2016 - Nov 2016

INDUSTRY EXPERIENCE

Altair Engineering

Virtual Interface Development Intern, supervised by Dennis Ward

Troy, Michigan

May 2019 - Aug 2019

- Lead research on game engines for simulation-driven design software R&D
- Developed a collaborative hybrid desktop-VR CFD post-processor using Unity (C#) and Unreal (C++)
- Optimized graphics pipeline to support large CFD meshes (≈ 5 million vertices) at 60 fps
- Designed client-server architecture for asynchronous data loading and synchronous interactions and visualizations

Def Method

Strategy and Marketing Intern, mentored by Julia Macalaster

New York, NY

May 2018 - Aug 2018

- Lead company's rebranding efforts and conducted client interviews, resulting in brand guideline and design materials (e.g: logos, business cards, websites)
- Train marketing staff in creative and technical skills for producing professional videos and photos

ACADEMIC SERVICE

Reviewer, ICRA (2021, 2022, 2023, 2024), IROS (2022,2023,2024), ICVS (2023), CoRL (2022, 2023, 2024), RSS (2025), SIGGRAPH (2025), IEEE T-RO, IEEE RA-L

TEACHING

Teaching Assistant

Data Driven Decision Making

July 2021 - Present

Columbia University

- Write lecture notes, survey literature, and design assignments on the theory and applications of bandit algorithms, off-policy evaluation, and dynamic programming

Teaching Assistant

Topics in Robot Learning

Fall 2021

Columbia University

- Discuss papers with students and mentor student's course final research projects

Teaching Assistant

Physically Based Computer Animation

Fall 2020

Columbia University

- Assisted in designing and grading final exam
- Held weekly office hours
- Lead efforts in refactoring and documenting homeworks and automated grading scripts
- Organized collision detection algorithm design competition on Google Cloud

Teaching Assistant

Artificial Intelligence's MicroMasters: Animation and CGI Motion

Spring 2019 - Fall 2020

Columbia University Edx

- Lead development of new course material and resources
- Onboard and mentor new TA members
- Support learners through the online discussion forum

COURSE PROJECTS

- Maximal Extractable Value on L2** Dec 2021
Huy Ha, Vasiliki Vlachou, Quintus Kilbourn, Cesare De Michellis, [PDF](#), [Code](#) COMS 6998: Foundations of Blockchains
- Quantification and Analysis of MEV on Optimism, a Layer 2 for Ethereum
- Neural Temporal Radiance Fields** Dec 2020
Huy Ha*, Su-ji Park* COMS 6998: Representation Learning
- Developed an algorithm for encoding dynamic and visual priors into implicit 4D representations for novel view synthesis and dynamics prediction with meta-learning
- Deep Bisimulation Dreaming: Combating Distractions with State Abstractions** Dec 2020
Huy Ha, Sian Lee-Kitt, William Zheng, [PDF](#) STCS 6701: Foundations of Graphical Models
- Studied probabilistic embedding with bisimulation metrics in the context of latent space dreaming for sample efficient and generalizable reinforcement learning
- Temporal Difference Learning Is Not All You Need** Dec 2020
Huy Ha, Sian Lee-Kitt, [PDF](#) COMS 6998: Computation and the Brain
- Reviewed the role of dopamine in probabilistic computations and model-based learning in biological agents
- Coevolution of Morphology and Policy Implicit Neural Functions** Dec 2019
Huy Ha, [Project webpage](#) MECS 4510: Evolutionary Computation
- Studied neural networks as genotypes, their mutation operators, and mechanisms for encoding priors for morphology and policy evolution of soft robots
- Achieved robots with complex hopping gaits achieving running speeds up to 1.10 m/s
- GAN for Pseudo-Lidar generation in 3D Object Detection** Dec 2019
Rahul Subbiah, **Huy Ha** COMS 6998: Topics in Robotic Learning
- Extended state of the art Pseudo-Lidar approaches with Generative Adversarial Networks
- Improved downstream object detection accuracy for cars in the KITTI benchmark
- Quantum Support Vector Machines** Nov 2019
Huy Ha*, Haley So* IEOR 8100: Seminar on Quantum Computing
- Lectured on techniques to improve Quantum SVM complexity over classical SVMs
- Implemented Quantum SVM using Qiskit
- M3ch Planet** May 2019
Huy Ha, Matthew Chan, Mandeep Bhutani, Conder Shou, Mohammed Abdelmalik COMS 4172: 3D UI and AR
- Lead a team of 5 developers in an augmented reality multiplayer strategy action game using Vuforia and Unity
- Designed game's 3D models and animations in Blender

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