Curriculum Vitae

Personal Information

Hongyu Li
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Google Scholar: https://scholar.google.com/citations?user=aM2PHREAAAAJ&hl=en

Education

08/2023–Current	**Ph.D., Computer Science** Brown University, Providence, RI, USA **Advisor:** Professor Srinath Sridhar
08/2021–05/2023	**M.Sc., Computer Science** Northeastern University, Boston, MA, USA **Thesis:** Toward Stereo-based Obstacle Detection using Efficient Deep Neural Network **Advisor:** Professor Taşkın Padır **Advisor:** Professor Huaizu Jiang
08/2018–12/2020	**B.Sc., Computer Science** Rensselaer Polytechnic Institute, Troy, NY, USA **Second Major:** Economics **Honors:** Cum Laude, Dean's Honor List

Experience

05/2024–08/2024	**Applied Scientist II Intern** a Amazon Robotics (Innovation Lab), Westborough, MA Robotics research under Professor Taşkın Padır.
05/2023–08/2023	**Research Intern** Ⓗ Honda Research Institute, San Jose, CA Researched visuotactile perception under the supervision of Dr. Nawid Jamali and

Dr. Soshi Iba. Paper in progress. Filed patents **P.1** and **P.2**. Paper **C.3** under review.

09/2022–12/2022 **Research Intern**
Ⓗ Honda Research Institute, San Jose, CA
Researched in-hand object 6D pose estimation using visuotactile perception under the supervision of Dr. Nawid Jamali and Dr. Soshi Iba. Published paper **J.2**. Filed patents **P.3** and **P.4**.

09/2021–05/2023 **Graduate Research Assistant**
Robotics and Intelligent Vehicles Research Lab, Northeastern University, Boston, MA
PI: Professor Taşkın Padır
Researched in the fields of robot perception and navigation. Published papers **J.1**, **C.4**, and **C.5**.

03/2021–06/2021 **Artificial Intelligence Intern**
kpmg KPMG China, Nanjing, China
Developed the speech processing modules for KPMG AI Factory Platform.

PUBLICATIONS

∗ or † represents equal contribution or equal advising, depending on the roles of the authors.

Journals

J.1 Linfeng Zhao*, **Hongyu Li***, Taşkın Padır, Huaizu Jiang†, Lawson L.S Wong†. *E(2)-Equivariant Graph Planning for Navigation.* Accepted by IEEE Robotics and Automation Letters (RA-L) 2024. Present at IROS 2024.

J.2 **Hongyu Li**, Snehal Dikhale, Soshi Iba, Nawid Jamali. *ViHOPE: Visuotactile In-Hand Object 6D Pose Estimation with Shape Completion.* Accepted by IEEE Robotics and Automation Letters (RA-L) 2023. Present at ICRA 2024.

Conferences

C.1 **Hongyu Li**, Taşkın Padır, Huaizu Jiang. *StereoNavNet: Learning to Navigate using Stereo Cameras with Auxiliary Occupancy Voxels.* Under Review.

C.2 Tianye Ding*, **Hongyu Li***, Huaizu Jiang. *ODTFormer: Efficient Obstacle Detection and Tracking with Stereo Cameras Based on Transformer.* Under Review.

C.3 **Hongyu Li**, Snehal Dikhale, Jinda Cui, Soshi Iba, Nawid Jamali. *HyperTaxel: Hyper-Resolution for Taxel-Based Tactile Signal Through Contrastive Learning.* Under Review.

C.4 **Hongyu Li**, Zhengang Li*, Neşet Ünver Akmandor*, Huaizu Jiang, Yanzhi Wang, Taşkın Padır. *StereoVoxelNet: Real-Time Obstacle Detection Based on Occupancy Voxels From*

a Stereo Camera Using Deep Neural Networks. Accepted by IEEE International Conference on Robotics and Automation (ICRA) 2023. Project homepage: <https://lhy.xyz/stereovoxelnet>

C.5 Neşet Ünver Akmandor, **Hongyu Li**, Gary M. Lvov, Eric Dusel, Taşkın Padır. *Deep Reinforcement Learning based Robot Navigation in Dynamic Environments using Occupancy Values of Motion Primitives.* Accepted by IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022.

PRESENTATIONS

1. **Hongyu Li**, Snehal Dikhale, Soshi Iba, Nawid Jamali. *ViHOPE: Visuotactile In-Hand Object 6D Pose Estimation with Shape Completion.* Spotlight Talk at NeurIPS 2023 Workshop on Touch Processing.

2. **Hongyu Li**, Huaizu Jiang, Taşkın Padır. *StereoNavNet: Learning to Navigate using Stereo Camera with Auxiliary Occupancy Voxels.* Spotlight Talk at CVPR 2023 Workshop on 3D Vision and Robotics.

3. **Hongyu Li**, Zhengang Li*, Neşet Ünver Akmandor*, Huaizu Jiang, Yanzhi Wang, Taşkın Padır. *StereoVoxelNet: Real-Time Obstacle Detection Based on Occupancy Voxels From a Stereo Camera Using Deep Neural Networks.* Presented at IROS 2022 workshop "Agile Robotics: Perception, Learning, Planning, and Control," Kyoto, Japan, October 2022.

AWARDS

1. ICRA 2023 Travel Grant

PATENTS

P.1 **Hongyu Li**, Nawid Jamali, Soshi Iba. SYSTEMS AND METHODS FOR TAXEL HYPER-RESOLUTION THROUGH MULTI-CONTACT LOCALIZATION. Ⓗ *Patent Pending.*

P.2 **Hongyu Li**, Nawid Jamali, Soshi Iba. REPRESENTATION LEARNING OF TAXEL-BASED TACTILE SENSOR. Ⓗ *Patent Pending.*

P.3 **Hongyu Li**, Nawid Jamali, Snehal Dikhale, Soshi Iba. SYSTEMS AND METHODS FOR VISUOTACTILE OBJECT POSE ESTIMATION WITH SHAPE COMPLETION. Ⓗ *Patent Pending.*

P.4 **Hongyu Li**, Nawid Jamali, Soshi Iba. SYSTEMS AND METHODS FOR A SHAPE COMPLETION MODEL. Ⓗ *Patent Pending.*

P.5 Feiyu Zhu, Tianjian Dai, **Hongyu Li**, Tiancheng Mai, Yuchen Liang, Xiaojing Su. A kind of ball serving device for balls sport training. Granted CN107007996A

Teaching

01/2024–05/2024	**Graduate Teaching Assistant** Department of Computer Science, Brown University, Providence, RI CSCI 1430 Introduction to Computer Vision
09/2021–05/2022	**Graduate Teaching Assistant** Khoury College of Computer Sciences, Northeastern University, Boston, MA CS 7610 Foundations of Distributed Systems DS 2500 Intermediate Programming with Data
09/2019–07/2020	**Teaching Assistant** Department of Computer Science, Rensselaer Polytechnic Institute, Troy, NY CSCI 1190 Beginning Programming for Engineers

Services

Reviewer

Conferences

1. IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) 2024
2. European Conference on Computer Vision (**ECCV**) 2024
3. ACM CHI Conference on Human Factors in Computing Systems (**CHI**) 2024
4. IEEE International Conference on Robotics and Automation (**ICRA**) 2024
5. IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**) 2024

Journals

6. IEEE Robotics and Automation Letters (**RA-L**)
7. IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**)
8. Elsevier **Neurocomputing**

Providence, RI, April 7, 2024