

# DAVID CHO

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## EDUCATION

### DUKE UNIVERSITY

PhD in Computer Science – Advisor: Boyuan Chen

Durham, NC  
Sep 2023 – Present

### COLUMBIA UNIVERSITY

Master of Science in Computer Science - Vision, Graphics, Interactions, and Robotics Track

New York, NY  
May 2022

### COLUMBIA UNIVERSITY

Bachelor of Arts in Physics with a Concentration in Computer Science

New York, NY  
May 2020

## PUBLICATIONS

- Kuang Huang\*, **Dong Heon Cho**\*, Boyuan Chen; \*These authors contributed equally to this work. Automated Discovery of Continuous Dynamics from Videos. (preprint)
- Gaurav Jain, Yuanyang Teng, **Dong Heon Cho**, Yunhao Xing, Maryam Aziz, Brian A. Smith. “I Want to Figure Things Out”: Supporting Exploration in Navigation for People with Visual Impairments. (ACM CSCW 2023).
- Peter Yichen Chen, Jinxu Xiang, **Dong Heon Cho**, Yue Chang, G A Pershing, Henrique Teles Maia, Maurizio Chiamonte, Kevin Carlberg, Eitan Grinspun. CROM: Continuous Reduced-Order Modeling of PDEs Using Implicit Neural Representations. (ICLR 2023, notable-top-25%)

## RESEARCH EXPERIENCE

### DUKE UNIVERSITY COMPUTER SCIENCE DEPARTMENT

#### GENERAL ROBOTICS LAB

Durham, NC  
Sep 2023 – Present

- Investigated AI for Science methods, utilizing unsupervised machine learning to automate the discovery process.

### COLUMBIA UNIVERSITY COMPUTER SCIENCE DEPARTMENT

#### COLUMBIA GRAPHICS GROUP

New York, NY  
Sep 2021 – Aug 2022

- Developed novel, discretization agnostic, continuous reduced-order modeling (ROM) method to solve PDEs efficiently via implicit neural representations.

### COLUMBIA UNIVERSITY COMPUTER SCIENCE DEPARTMENT

#### COMPUTER ENABLED ABILITIES LAB

New York, NY  
Jan 2021 – Aug 2021

- Analyzed visually impaired people (VIP) needs and socio-technical challenges for future Navigation Assistance System (NAS) that facilitate independent exploration.

### COLUMBIA UNIVERSITY PHYSICS DEPARTMENT

#### CONDENSED MATTER LAB

New York, NY  
May 2018 – Jul 2018

- Explored semiconducting properties of NbSe<sub>2</sub> using scanning tunneling microscopy (STM).

## PROFESSIONAL EXPERIENCE

### DUKE UNIVERSITY COMPUTER SCIENCE DEPARTMENT, GRAPHICS SOFTWARE ARCHITECTURE - CS345

#### Teaching Assistant

Durham, NC  
Jan 2024 – May 2024

- Held regular office hours, assisting students in debugging programming assignments in C++.

### SAMSUNG RESEARCH AMERICA, THINK TANK TEAM

#### Research Intern

Mountain View, CA  
Jun 2020 – Aug 2020

- Trained three new DOPE-net pose estimation Tensorflow models to detect position and orientation of a specific "object" from RGB images and achieved accuracy within 3cm.
- Produced 300K+ domain-randomized and context aware synthetic data with varying position, lighting, background texture, as well as 3D replicated scene.
- Collaborated with design team to create a custom "object" and determine most accurate initial position to best exhibit pose estimation mechanism for live demo presentation of prototype product (CES 2020).
- Integrated models into ROS Melodic to allow simultaneous detection of multiple "objects" for robotic arm grasping.

## TECHNICAL SKILLS

- Python, C, C++, Computational Physics, Java, Swift, TensorFlow, Pytorch, MATLAB, ROS, MySQL, OpenGL