DAVID CHO

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EDUCATION

DUKE UNIVERSITY   Durham, NC
PhD in Computer Science – Advisor: Boyuan Chen   Sep 2023 – Present

COLUMBIA UNIVERSITY   New York, NY
Master of Science in Computer Science - Vision, Graphics, Interactions, and Robotics Track   May 2022

COLUMBIA UNIVERSITY   New York, NY
Bachelor of Arts in Physics with a Concentration in Computer Science   May 2020

PUBLICATIONS

- 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. (To Appear) Proceedings of the ACM on Human-Computer Interaction (CSCW 2023).
- Peter Yichen Chen, Jinxu Xiang, **Dong Heon Cho**, Yue Chang, G A Pershing, Henrique Teles Maia, Maurizio Chiaramonte, Kevin Carlberg, Eitan Grinspun. CROM: Continuous Reduced-Order Modeling of PDEs Using Implicit Neural Representations. arXiv, 2022

RESEARCH EXPERIENCE

DUKE UNIVERSITY COMPUTER SCIENCE DEPARTMENT   Durham, NC
GENERAL ROBOTICS LAB   Sep 2023 – Present
- Investigated AI for Science methods, utilizing unsupervised machine learning to automate the discovery process.

COLUMBIA UNIVERSITY COMPUTER SCIENCE DEPARTMENT   New York, NY
COLUMBIA GRAPHICS GROUP   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   New York, NY
COMPUTER ENABLED ABILITIES LAB   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   New York, NY
CONDENSED MATTER LAB   May 2018 – Jul 2018
- Explored semiconducting properties of NbSe2 using scanning tunneling microscopy (STM).

PROFESSIONAL EXPERIENCE

DUKE UNIVERSITY COMPUTER SCIENCE DEPARTMENT, GRAPHICS SOFTWARE ARCHITECTURE - CS345   Durham, NC
Teaching Assistant   Jan 2024 – Present
- Held regular office hours, assisting students in debugging programming assignments in C++.

SAMSUNG RESEARCH AMERICA, THINK TANK TEAM   Mountain View, CA
Research Intern   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