

# Ethan Chun

📞 (650) 961-1911 | ✉️ ethan.l.chun@gmail.com | 🌐 elchun | ⚙️ elchun.github.io

## EDUCATION

<b>Massachusetts Institute of Technology</b> Candidate for Masters of Engineering in Artificial Intelligence GPA: 5.0 / 5.0	Cambridge, Massachusetts 2024 - 2025
<b>Massachusetts Institute of Technology</b> Bachelor of Science in Artificial Intelligence and Decision Making (Course 6-4) GPA: 5.0 / 5.0	Cambridge, Massachusetts 2020 - 2024

## PUBLICATIONS

- [1] T. Shu, D. Levine, S. H. Yeon, **E. Chun**, C. Shallal, J. McCullough, R. Brånemark, M. Carty, S. Boerhout, A. Ko, C. Sullivan, G. Zhu, M. Nawrot, M. Carney, G. Wieschhoff, G. Friedman, and H. Herr, "Tissue-integrated bionic knee restores versatile legged movement after amputation," *Science*, 2025, under review.
- [2] **E. Chun**, Y. Du, A. Simeonov, T. Lozano-Perez, and L. Kaelbling, "Local neural descriptor fields: Locally conditioned object representations for manipulation," *2023 IEEE International Conference on Robotics and Automation (ICRA)*, 2023.
- [3] T. Shu, C. Shallal, **E. Chun**, A. Shah, A. Bu, D. Levine, S. H. Yeon, M. Carney, H. Song, T.-H. Hsieh, and H. M. Herr, "Modulation of prosthetic ankle plantarflexion through direct myoelectric control of a subject-optimized neuromuscular model," *IEEE Robotics and Automation Letters*, 2022.

## EXPERIENCE

<b>Tesla AI</b> <i>Robotics ML Intern, Visual Language Navigation</i> • Developed vision and language based navigation systems for Optimus humanoid robot.	Palo Alto, California Jan. 2025 — Present
<b>MIT Biomimetic Robotics Lab — Dr. Sang-bae Kim</b> <i>Research Assistant, Robotic Manipulation and 3D Perception</i> • Designed new neural network training pipeline for polyurethane based fingertip sensors, improving mean contact location prediction by 19% and enabling inference at exactly 100 Hz. • Designed, implemented, validated, and submitted novel grasp approach architecture to predict potential robotic grasping directions from raw point cloud data using a variation of the PointNet++ architecture.	Cambridge, Massachusetts Jan. 2023 — Jan 2025
<b>Boston Dynamics AI Institute</b> <i>Research Intern, Watch Understand Do</i> • Built ROS2 interfaces to allow communication with Spot's PTZ camera. • Built visualization utilities to allow convenient visualization objects in ROS2's RViz visualizer.	Cambridge, Massachusetts Jan. 2024
<b>Learning and Intelligent Systems — Dr. Tomás Lozano-Pérez and Dr. Leslie Pack Kaelbling</b> <i>Undergraduate Researcher, Vision-based Robotic Manipulation</i> • Designed, implemented, and published Local Neural Descriptor Fields – a novel framework using latent embeddings from Convolutional Occupancy Networks to enable robust robotic grasping of household objects • Used Pytorch, Pybullet, and a Franka Panda robot to develop model architecture, data loading, data visualization systems, and a novel distance-based contrastive loss function.	Cambridge, Massachusetts Dec. 2021 — June. 2023
<b>Biomechatronics Group — Dr. Hugh Herr</b> <i>Undergraduate Researcher, Embedded Systems and Experiments</i> • Utilized a novel EMG control paradigm and custom powered prosthetic to restore natural gait biomechanics for a unilateral transtibial amputee and several unilateral transfemoral amputees. • Implemented robotics control stack in C++, including communications drivers (I2C, SPI, CAN) and integrated logger.	Cambridge, Massachusetts Mar. 2021 – Jan. 2023

## SELECTED PROJECTS

- Novel View Synthesis from Single Images with Tiny Latent Diffusion Models**
- Built tiny latent diffusion models to generate novel views given a single conditioning image and relative camera transform.
  - Demonstrated training times of less than two hours, allowing potential integration of LDMs into conventional robotics pipelines.

## SKILLS

<b>Tools</b>	PyTorch, Numpy, Pybullet, MATLAB, Git, Embedded Linux, SolidWorks
<b>Relevant Coursework</b>	Algorithms, Machine Learning, Inverse Graphics, Real Analysis, Abstract Algebra, Probability Theory