Jenny Baek

235 Albany St, Cambridge, MA 02139 | (770) 881-1008 | jennyb@mit.edu | LinkedIn

EDUCATION

Massachusetts Institute of Technology – *Cambridge, MA*

- M.Eng in EECS with Concentration in Artificial Intelligence **May 2026**
- SB in Artificial Intelligence & Decision Making **May 2025**
- **Relevant coursework:**
  - **CS:** Machine Learning, Deep Learning, Computer Vision, NLP, Robotic Manipulation, Algorithms, Computational Photography in C++, Control Design, Fundamentals of Programming in Python
  - **MATH:** Statistical Data Analysis, Discrete Math, Probability, Linear Algebra, Differential Equations

SKILLS & TECHNICAL PROJECTS

PROGRAMMING & FRAMEWORKS: Python, PyTorch, TensorFlow, C++, OpenCV, scikit-learn, pandas, HuggingFace, Matplotlib, GitHub, HTML / CSS, Command Line Interface, Bash

COMPUTER VISION & MACHINE LEARNING:

- **Vision-Based Point-and-Gesture Recognition (MEng Thesis):** Extending an existing project to improve gesture recognition at a range up to 20 meters; CNNs, Vision Transformers (ViT), segmentation; Python, PyTorch
- **BrailleGNN (Internship):** Developed a graph neural network from scratch for real-time tactile data interpretation and Braille recognition; Python, PyTorch, Git, technical documentation

ROBOTIC PERCEPTION:

- **CupStackBot (Class Project):** Implemented the RGB-D perception system for a simulated cup-stacking robot, and applied k-means clustering to estimate grasp locations; Python, PyTorch, Drake

PROFESSIONAL & RESEARCH EXPERIENCE

Bristol Robotics Laboratory, Dexterous Robotics Group – *Bristol, UK* **Jun 2025 – Aug 2025**
Machine Learning & Robotics Intern

- Designed and implemented a graph neural network (GNN) to interpret data from a vision-based tactile sensor, enabling real-time, high-accuracy Braille recognition for robotic systems.
- Developed a full perception pipeline, covering data preprocessing, model training, and performance evaluation for real-time deployment.
- Coordinated with supervisors while independently managing milestones and producing structured technical documentation for future team members.

MIT Kavli Institute for Astrophysics and Space Research – *Cambridge, MA* **Jun 2024 – Feb 2025**
Machine Learning Research Intern

- Built a conditional stable diffusion model in PyTorch to remove scattered light from TESS satellite images, applying advanced computer vision and generative modeling techniques.
- Scaled the model to handle multi-camera input and high-resolution images, improving robustness and versatility for large datasets.

Reliable Autonomous Systems Lab @ MIT (REALM), MIT AeroAstro – *Cambridge, MA* **Feb 2023 – Feb 2024**
Research Intern

- Developed formation control algorithms for multi-robot autonomous systems in a Python simulation and presented results in a lab-wide session.
- Implemented and trained autonomous navigation models using Google JAX, enabling scalable simulation-based experimentation.

MIT Media Lab, Tangible Media Group – *Cambridge, MA* **Feb 2022 – Dec 2022**
Research Intern

- Improved accuracy of a 3D computational landscape simulation using C++ and openFrameworks for the SandScape exhibit at the MIT Museum.
- Collaborated with mechanical and software engineers to modernize TRANSFORM motion design software, ensuring maintainability and compatibility with the latest openFrameworks version.