

Itay Kadosh

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Education

University of Texas at Dallas, B.S Computer Science & B.S Applied Mathematics (Double Degree) Jan 2024 – May 2026

- GPA: 3.94/4.0
- **Relevant Coursework:** Statistical Methods in AI & Machine Learning (Graduate), Partial Differential Equations, Numerical Analysis, Advanced Vector Calculus, Probability Theory, Linear Algebra, Discrete Mathematics, Data Structures and Algorithms, Operating Systems
- Consistently excelled while managing a rigorous 21-credit hour course load each semester.
- Activities: Intelligent Robotics and Vision Lab, Chess Club, Comet Robotics Club, PUTNAM Club

Collin College, Computer Science Track Aug 2023 – Dec 2023

- GPA: 3.93/4.0
- **Relevant Coursework:** Linear Algebra, Computer Architecture, Ordinary Differential Equations
- Represented the College in math conferences as both a solo and team presenter under professor Mike Panahi.
- Featured on Collin College newsletter for representing the school at conferences.

Experience

Undergraduate Researcher, Intelligent Robotics and Vision Laboratory at The University of Texas at Dallas Jul 2024 – Present

- PI: Professor Yu Xiang
- Conducted robotic perception and AI-driven exploration research, focusing on deep learning for object recognition, scene understanding, and semantic mapping.
- Worked with state-of-the-art vision models like GroundingDINO, SAM/MobileSAM, and YOLO for autonomous mobile manipulation.
- Co-authored a research paper on semantic mapping for mobile robots, targeting publication in a top robotics conference.
- Currently working on multiple projects with topics ranging from Computer Vision to Deep-Learning driven Exploration.

Summer Researcher, Department of Industrial Engineering at Clemson University Jul 2024 – Present

- PI: Professor Tuğçe Işık
- Implemented Machine Learning methods (MDPs) to solve Stochastic Optimal Control Problems in the world of Operations Research.
- Focused on Optimal Dynamic Allocation Policy of workers in a queuing network when taking into consideration worker fatigue over a finite work horizon.

Independent Study with Professor Mike Panahi, Collin College Sep 2023 – Mar 2024

- Undergraduate Researcher — PI: Professor Mike Panahi
- Researched numerical analysis methods, implementing iterative solvers (Gauss-Seidel, SOR, Jacobi) and eigenvalue approximation using Gerschgorin's Theorems.
- Developed and optimized multi-language numerical models in C, Python, and MATLAB.
- Presented research findings at regional mathematics conferences.

Freelance – Private Teacher Feb 2022 – Jun 2025

- Taught mathematics and computer science to over 20 students, ranging from middle school to collegiate level.
- Specialization in subjects such as Linear Algebra, Calculus, Python Programming, Differential Equations, Data

Projects

AutoX-SemMap: Autonomous Exploration and Semantic Updating of Large-Scale Indoor Environments with Mobile Robots

July 2024 – Sept 2024

Intelligent Robotics and Vision Laboratory (IRVL)

GitHub Link

- Developed a robotic system for autonomous exploration and semantic mapping in large-scale indoor environments.
- Integrated LiDAR-based SLAM for mapping and RGB-D camera-based object recognition.
- Implemented and tested the system on a Fetch robot, successfully mapping a 93m x 90m floor and updating object locations dynamically.
- Applied deep learning models for object segmentation and detection to enhance real-time perception and map updates.
- Currently under review for publishing at a top robotics conference.
- **Collaborators:** Sai Haneesh Allu, Itay Kadosh, Tyler Summers, Yu Xiang

RPX (Robot Perception X): Benchmark Dataset for Robotics Perception Tasks

Jan 2025 – Present

Intelligent Robotics and Vision Laboratory (IRVL)

- Developed a comprehensive dataset for benchmarking state-of-the-art models in robotic perception and vision-based tasks.
- Evaluated performance on camera pose estimation, object reconstruction, and unseen object instance segmentation.
- Collected a diverse set of objects and background for dataset construction (241 Real world Objects & 134 Unique Backgrounds)
- **Collaborators:** Jishnu Jaykumar, Itay Kadosh, Sai Haneesh Allu, Govind Rangappa

Data-Driven Approach to Efficient Exploration

Jan 2025 – Present

Intelligent Robotics and Vision Laboratory (IRVL)

- Developed a deep learning-based model to optimize autonomous robotic exploration.
- Applied deep learning and probabilistic planning to enhance robot decision-making in unstructured environments.
- **Collaborators:** Saurav Dosi, Itay Kadosh

Awards

Comet Transfer Scholarship

- \$5,000 per year (renewable for up to 3 years).
- Awarded for academic excellence at Collin College (GPA 3.75–4.0).

Phi Theta Kappa Scholarship

- \$1,000 per year (renewable for up to 3 years).
- Awarded for Phi Theta Kappa Honor Society membership (GPA 3.5–4.0).

Skills & Interests

Programming Languages: C, C++, Python, MATLAB, Java

Additional Skills: Linux, Mathematical Proofs, Git, TensorFlow, PyTorch,

Interests: Machine Learning, Numerical Analysis, Computational Mathematics, Robotics, Computer Vision, Data Assimilation, Stochastic Processes

References

Yu Xiang

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Mike Panahi

Professor/Mentor, Collin College
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Stephen McKeown

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