

JOEL MILLA

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EDUCATION

Instituto Tecnológico y de Estudios Superiores de Monterrey

Bachelor of Computing in Computer Science and Technology

- Academic Achievements: Top 1% in the School of Engineering and Academic Talent Scholarship, GPA: 98.06/100

Aug 2021 - Present

National University of Singapore

Bachelor of Computing in Computer Science (Exchange Program)

- Deep Learning Hackathon NTU; Hornet Autonomous Perception Team; Modules: Linear Algebra & Machine Learning

Jan 2025 - May 2025

SKILLS

Software: Proficient (2-3 years): C++, Git, Linux, Python || Experienced (6-12 months): ROS2, OpenCV, PCL, Docker, Next.js, TypeScript, AWS, Swift, SQL, MATLAB, Java

WORK EXPERIENCE

MedTracker, Founder

Sep 2023 - Aug 2024

- Directed a team of four in a startup to develop a medical system that enables patients to log daily health metrics and allows doctors to analyze trends over time, improving patient care.
- Managed project coordination, task management, and ensured timely delivery using agile practices.

Google, Inc (New York City, NY), Software Engineer Intern

Jun 2023 - Sep 2023

- Cooperated with a fellow intern at YouTube to improve search experience for 14+ million learners struggling with content discovery, refining UI and reducing query retries among users frequently unable to find relevant educational videos
- Utilized C++ and Protocol Buffers to extract, render, and transfer academic metadata across Google's data infrastructure.
- Created comprehensive tests and secured localized translations for personalized experiences, displaying information as badges in YouTube Search and impacting over 2 million users.

RESEARCH

Air (Artificial Intelligence and Robotics) Laboratory, Research Intern

June 2025 - Present

- Collaborated with doctoral researcher to develop autonomous navigation system for greenhouse agricultural robots
- Benchmarked state-of-the-art navigation models against agricultural performance metrics; optimized deep learning architecture (LaneATT) for greenhouse-specific constraints and trained model for agricultural environments
- Developed control system leveraging trained model for real-time navigation; validated system performance through field deployments achieving 90% accuracy and state-of-the-art inference speeds optimized for embedded hardware deployment

VantTec - Autonomous Research Team, Developer

Aug 2024 - Nov 2024

- Collaborated in the perception team of a student research group to integrate a ZED stereo camera with an NVIDIA Jetson platform for an underwater autonomous vehicle, achieving reliable underwater image captured in varied light conditions.
- Configured the Jetson SDK and necessary packages for the ZED camera, developing Python scripts to establish telemetry-based real-time monitoring of camera feed of autonomous vehicles in underwater situations.

PROJECTS

LiDAR-Based Perception System, Developer

Jan 2025 - May 2025

- Constructed perception pipeline integrating custom RANSAC segmentation and KD-tree clustering for point cloud processing, implementing particle filter algorithm for temporal object tracking across sequential point cloud frames
- Enhanced computation efficiency through voxel grid filtering and region selection, enabling robust obstacle detection and trajectory prediction in sequential urban environment dataset, processing point clouds within 0.2 seconds per file

COMPETITIONS

International Collegiate Programming Contest (ICPC), Contestsant

Aug 2022 - Present

- Obtained 64th/482 at Mexico Grand Prize (2024), captured 3rd (2023) and 6th place (2022) in University Championship

HackMTY, Team Member

Sep 2024 - Sep 2024

- Devised a WhatsApp banking system enabling account creation through computer vision authentication and AI-powered recommendation, acquiring Top 40 placement among 720+ teams in Latin America's largest student hackathon

CERTIFICATIONS

- Certifications & Courses in C++, Sensor Fusion, Computer Vision, Machine Learning, and Linux Fundamentals