Williard Joshua Jose

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EDUCATION

University of Massachusetts Amherst, MA, USA
MS/PhD in Computer Science (GPA: 4.00/4.00), September 2022 – September 2027 (expected) [*Adviser: Hao Zhang*]
Working on multi-robot collaboration and adaptation using reinforcement learning, diffusion policy, and flow matching

University of the Philippines, Quezon City, Philippines
BS in Electronics and Communications Engineering (GPA: 3.91/4.00), June 2012 – June 2017
Summa cum laude and class valedictorian (rank 1) of 3,000+ graduating students

PUBLICATIONS (Link to Google Scholar)

Collaborative Quadruped Transportation in 3D Terrain with Constrained Diffusion [Paper] [Page]
Williard Joshua Jose, Li Chen, Hao Zhang. *Under review*

Harmonizing Team and Individual Goals in Decentralized Multi-Robot Fire Suppression through Curriculum Reinforcement Learning [Paper] [Page]
Williard Joshua Jose, Yuhao Li, Hao Zhang. *Under review*

EdgeGrasper: Fast Polygon Segmentation-Based Grasp Detection [Paper] [Page]
Williard Joshua Jose, Bertram David Matabang, Joemer Aliman, Michel Onasis Ogbinar, Rowel Atienza. *Under review*

Bilevel Learning for Dual-Quadruped Collaborative Transportation under Kinematic and Anisotropic Velocity Constraints [Paper] [Page]
Williard Joshua Jose, Hao Zhang. *Under review*

Subteaming and Adaptive Formation Control for Coordinated Multi-Robot Navigation [Paper] [Page]
Zihao Deng, Peng Gao, Williard Joshua Jose, Maggie Wigness, John Rogers III, Brian Reilly, Christopher Reardon, Hao Zhang. *Conference on Robot Learning (CoRL)*, 2025

Coordinated Multi-Robot Navigation with Formation Adaptation [Paper] [Page]
Zihao Deng, Peng Gao, Williard Joshua Jose, Christopher Reardon, Maggie Wigness, John Rogers III, Hao Zhang. *IEEE International Conference on Robotics and Automation (ICRA)*, 2025

Bandwidth-Adaptive Spatiotemporal Correspondence Identification for Collaborative Perception [Paper] [Page]
Peng Gao, Williard Joshua Jose, Hao Zhang. *IEEE International Conference on Robotics and Automation (ICRA)*, 2025

Learning for Dynamic Subteaming and Voluntary Waiting in Heterogeneous Multi-Robot Collaborative Scheduling [Paper] [Page] *Finalist for Best Paper Award on Multi-Robot Systems*
Williard Joshua Jose, Hao Zhang. *IEEE International Conference on Robotics and Automation (ICRA)*, 2024

AMRConvNet: AMR-Coded Speech Enhancement Using Convolutional Neural Networks [Paper]
Williard Joshua Jose. *IEEE International Conference on Systems, Man and Cybernetics (SMC)*, 2020

Development of a 3D-Printed Biped Robot with Distributed Joint Control [Paper]
Williard Joshua Jose, Manuel Ramos, Jr. *IEEE International Conference on Control, Automation and Robotics (ICCAR)*, 2018

WORK EXPERIENCE

Graduate Research and Teaching Assistant, University of Massachusetts Amherst, September 2022 – Present
Multi-robot collaboration: learn robot team-based strategies for collaborative transportation and formation control (DARPA)
Adaptive collaborative robot perception: develop ML methods for bandwidth-limited co-perception (Toyota InfoTech Labs)
Teaching assistant for the graduate course CS 603: Robotics

Lead Engineer (AI), Samsung R&D Institute Philippines, June 2018 – Present (*on leave*)
Led a team of 3 engineers on ML projects in 5G networks for resource optimization, information retrieval, anomaly detection
Performed R&D on deep learning, computer vision, and speech, resulting in patents (5 granted, 2 pending) and 1 publication

Lecturer 2, University of the Philippines, February 2022 – August 2022
Taught undergraduate engineering students for EEE 121: Data Structures and Algorithms

Management Associate, Globe Telecom, September 2017 – May 2018
Multiple roles in: network planning of data services platforms, product management of internet access products, and project management of an enterprise transformation project

Student Assistant, University of the Philippines, August 2015 – May 2016
Performed system administration and mass software and virtual machine deployment to computer classrooms

Intern, Maxim Integrated, June 2015 – July 2015
Debugged and modified hardware and software test systems for IC testing as an intern under the Test Optimization Team

HONORS & AWARDS

Robert and Deanna Hagerty Robotics Scholarship, University of Massachusetts Amherst, MA, USA, September 2024
Competitive scholarship awarded to outstanding students for their excellence in their research in the area of robotics

Finalist for Best Paper Award on Multi-Robot Systems, Yokohama, Japan, May 2024
IEEE International Conference on Robotics and Automation

Travel Award Grant, Conference on Robot Learning (CoRL), Seoul, South Korea, November 2024

Travel Award Grant, IEEE International Conference on Robotics and Automation (ICRA), Yokohama, Japan, May 2024

Robin Popplestone Memorial Fellowship, University of Massachusetts Amherst, MA, USA, May 2023
Competitive fellowship awarded to a Computer Science graduate student pursuing research in Robotics/Artificial Intelligence

Employee of the Year, Samsung R&D Institute Philippines, 2020
Only 1 employee is awarded annually, demonstrating excellence and delivering significant value for the research center

Samsung SW Certificate Expert, Samsung Electronics, 2019
Highest certification level; less than 1% of Samsung engineers globally are Expert level in algorithms and data structures

1st Place, 12th Samsung Hackathon (250 Global Participants), Samsung C-Lab, Seoul, South Korea, November 2018
Annual open innovation event where our team beat entries from Samsung (HQ-Korea, Poland, China, India, Ukraine, Russia) and top university students in Korea

Top 2, Board of Electronics Engineers, Professional Regulation Commission, Philippines, October 2017
2nd highest out of 4,784 examinees of the national licensure exam for electronics engineers

World Finalist, ACM International Collegiate Programming Contest, Rapid City, SD, USA, May 2017
The ACM-ICPC is the world's oldest and most prestigious programming contest; seeded first place in the Manila regional site

Chancellor Award for Student Distinction, University of the Philippines Diliman, Philippines, April 2017
1 of 4 annual awardees out of 24,000+ students; given for all-around excellence in academics, leadership, and extracurriculars

Oblation Scholar, University of the Philippines, Philippines, 2012 – 2017
Prestigious fully funded scholarship awarded to the top 50 out of 60,000+ university applicants

DOST-SEI Merit Scholar, University of the Philippines, Philippines, 2012 – 2017
Competitive scholarship awarded to students with high aptitude in science and mathematics

Gold Medalist, International Earth Science Olympiad, Modena, Italy, September 2011

Silver Medalist, International Junior Science Olympiad, Abuja, Nigeria, December 2010

PATENTS

Device and Method for Wirelessly Communicating on Basis of Neural Network Model, US11508394B2 (2022), KR102645659B1 (2024), PH12019050079 (2025), EP3843092A1 (pending). Inventors: Williard Joshua Jose

System and Method for Bidirectional Automatic Sign Language Translation and Production, US12437673B2 (2025), PH12022050141 (2025). Inventors: Daryl Peralta, Shakira Arguelles, Williard Joshua Jose

Method and Article of Manufacture for Providing a Mobility Management with Optimized Paging, US12262344B2 (2025), PH12021050520 (pending). Inventors: Luis Gabriel Del Rosario, Amielle Dulay, Williard Joshua Jose, John William Orillo, Joseph Alan Baking

System and Method for Intent-Based Orchestration in Radio Access Networks, PH12022050117 (2025). Inventors: Amielle Dulay, Williard Joshua Jose

System of Calibrating Device Configurations Using Room Geometry, PH12021050201 (2024). Inventors: Shakira Arguelles, Alfonzo Azucenas, Harjit Singh Brar, Cyril Josef Cortez, Williard Joshua Jose, James Carl Necio, Jose Ricardo IV Ruiz

System and Method for Time-of-Flight Depth Map Enhancement with RGB Images, PH12022050126 (pending). Inventors: Williard Joshua Jose, John William Orillo, Areeya Rubenecia, Juan Raphael Seña

Method for Media Enhancement and Bandwidth Optimization on Communication Networks, PH12019050293 (pending). Inventors: Williard Joshua Jose

PROFESSIONAL ACTIVITIES

Reviewer for ICRA (2025-2026), CoRL (2025), RA-L (2024-2025), IROS (2024-2025), CASE (2025), SMC (2020, 2025)
Student Volunteer, ICCV 2023, Paris, France
Mentor, Undergraduate Research Volunteers (URV) 2024, University of Massachusetts Amherst
Mentor, Early Research Scholars Program (ERSP) 2023-2024, University of Massachusetts Amherst
Volunteer, PhD Applicant Support Program (PASP) 2023, University of Massachusetts Amherst

PROFESSIONAL ORGANIZATIONS

Graduate Student Member, Institute of Electrical and Electronics Engineers (IEEE), 2016 – Present
Graduate Student Member, IEEE Robotics and Automation Society (IEEE RAS), 2016 – Present
Associate Member, National Research Council of the Philippines (NRCP), 2022 – Present
Member, Institute of Electronics Engineers of the Philippines (IECEP), 2017 – Present

SKILLS

Programming Languages: Python, C/C++, Java, MATLAB
Machine Learning Frameworks: PyTorch, TorchRL, PyTorch Geometric, TensorFlow, NumPy, Pandas, Scikit-learn, SciPy
Robotics Frameworks: ROS 1 (Melodic/Noetic), ROS 2 (Foxy/Humble/Jazzy)
Simulators: Genesis, Isaac Lab/Isaac Sim, Gazebo, MuJoCo, PyGame, VMAS
System Administration: Bash, Slurm, Docker, Kubernetes, Cloud AI/ML and data certifications (AWS, GCP, Azure)