

Engr. Immanuel Jose C. Valencia

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EDUCATION

DE LA SALLE UNIVERSITY

Manila, Philippines

Doctor of Philosophy in Manufacturing Engineering (Candidate)

2022 - Present

Candidate Faculty Program Scholar (*Awarded a full doctoral scholarship for faculty development pathway*)

DE LA SALLE UNIVERSITY

Manila, Philippines

Master of Science in Manufacturing Engineering

2020 - 2022

DOST-PROSPER Scholar (*Received research funding support for graduate-level work*)

TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES

Manila, Philippines

Bachelor of Science in Electronic Engineering

2016 - 2019

TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES

Manila, Philippines

Diploma in Electronic and Communications Engineering

2013 - 2016

PROFESSIONAL AND RESEARCH EXPERIENCE

NATIONAL CHIN-YI UNIVERSITY OF TECHNOLOGY

Taichung City, Taiwan

Visiting Graduate Student Researcher

2026 - Present

- Conduct research on visuo-tactile sensing for robotic grasping, with focus on sensor design, tactile perception, and robotic manipulation.
- Develop and evaluate vision-based tactile sensing methods for contact detection, object interaction, and grasp-related perception tasks.
- Support robotics and haptics research through literature review, experimental design, prototype development, and technical documentation.

DE LA SALLE UNIVERSITY

Manila, Philippines

Faculty and Researcher

2022 - Present

- Delivered engineering instruction in computing, data analytics, research, innovation, and core engineering fundamentals.
- Advanced research-oriented learning through student mentoring, technical writing guidance, and project-based engineering outputs.
- Supported departmental visibility by developing professional publicity materials, academic program content, and stakeholder-facing communication assets.

INTELLIGENT SYSTEMS INNOVATIONS INCORPORATED (ISI INC.)

Manila, Philippines

AI - ML Engineer

2022 - Present

- Developed AI models and intelligent software applications for international client projects, with focus on applied computer vision and machine learning.
- Built and deployed AI-driven solutions that translated client requirements into functional analytics, automation, and decision-support applications.
- Trained and guided interns in AI model development, software implementation, research workflows, and professional project delivery.

CENTER FOR ENGINEERING AND SUSTAINABLE DEVELOPMENT RESEARCH

Manila, Philippines

Computer Programmer III

2019 - 2022

- Engineered intelligent transportation system solutions for a DOST funded research project, including vision-based passenger counting and transport analytics.
- Developed STARPLAN web, mobile, and AI vision technologies for roadside monitoring, public transport assessment, and data-driven planning.
- Coordinated with local government units and trained regional stakeholders in the deployment, operation, and use of developed technologies.

PROJECTS

DIGITAL MANUFACTURING ASSEMBLY TRAINER WITH DIGITAL TWIN SIMULATOR

Funding Agency: Department of Science and Technology

2025 - 2026

Role: Software Development Lead

ROAD CONDITION MONITORING AND EVALUATION DEVICE

Funding Agency: Commission on Higher Education (Grants in Aid)

2025 - 2026

Role: Technical Development Lead

PROJECT SYLLABI SMART LEARNING MANAGEMENT SYSTEM

Funding Agency: National Research Council of the Philippines

2024 - 2025

Role: Software Development Lead

SUSTAINABLE TECHNOLOGY-ASSISTED ROUTE PLANNING FOR REGION VI

Funding Agency: Department of Science and Technology

2020 - 2022

Role: Software Developer

SUSTAINABLE CITIES AND COMMUNITIES IN THE PHILIPPINES PROJECT

Funding Agency: National Research Council of the Philippines

2020 - 2022

Role: Policy Researcher

FASTRAC: CATCHALL

Funding Agency: Department of Science and Technology

2019 - 2022

Role: Computer Vision Engineer

LEADERSHIP AND AFFILIATIONS

NATIONAL RESEARCH COUNCIL OF THE PHILIPPINES

Manila, Philippines

Associate Member

2026 - Present

- Contribute to national research networks supporting scientific collaboration, knowledge exchange, and research-driven development.
- Engage with multidisciplinary research communities to advance applied engineering, innovation, and technology-focused initiatives.

IEEE PHILIPPINES SECTION

Manila, Philippines

Technical Committee Chair

2026 - Present

- Lead technical committee initiatives that support professional development, research engagement, and engineering knowledge-sharing.
- Coordinate technical programs, events, and activities that strengthen collaboration among IEEE members, academics, and industry professionals.

IEEE PHILIPPINES AESS/GRSS JOINT CHAPTER

Manila, Philippines

Section Secretary

2025 - Present

- Manage chapter documentation, communications, and coordination to support technical activities and member engagement.
- Support chapter operations for aerospace, electronic systems, geoscience, and remote sensing programs through organized administrative and technical assistance.

IEEE HNICEM INTERNATIONAL CONFERENCES

Philippines

Technical Chair and Session Chair

2022 - Present

- Chaired technical sessions for the annual conference, facilitating research presentations, discussions, time management, and professional session flow.
- Ensured smooth conference operations through session moderation, technical coordination, and academic engagement with participants.

SKILLS

Programming: Python, C++, MATLAB, JavaScript

AI and Computer Vision: Machine Learning, Object Detection, Image Processing, Visual Analytics

Robotics and Simulation: ROS, NVIDIA Isaac Sim, MuJoCo, Robotic Sensing and Haptics

Embedded and Edge Systems: Edge Computing, Sensor-Based Systems, Arduino, Raspberry Pi

Engineering Analytics: Data Analysis, Operations Research, Optimization, Remote Sensing

Software Development: Django, Android Studio, Web and Mobile Applications

Research: Technical Writing, Literature Review, Project Documentation, Stakeholder Training

CERTIFICATIONS AND LICENSES

ELECTRONICS ENGINEER

Professional Regulation Commission

Manila, Philippines

Issued Nov 2019

ELECTRONICS TECHNICIAN

Professional Regulation Commission

Manila, Philippines

Issued Nov 2019

FUNDAMENTALS OF DEEP LEARNING

NVIDIA Deep Learning Institute

(Online) Santa Clara, California

Issued Nov 2022

RESEARCH

Research Areas: Robotics and automation, visuo-tactile sensing, embedded systems, edge computing, remote sensing, applied artificial intelligence, machine learning, computer vision, image processing, operations research, and optimization.

Research Metrics: Google Scholar h-index: 4 | Citations: 84

Selected Publications:

“From Reef Ecology to Industry 4.0: Strategic, Smart and Sustainable Framework for Crown-of-Thorns Starfish Outbreak Management.” 2026. Ecological Informatics.

“Real-Time Road Damage Classification and Severity Detection System.” 2025. TENCON 2025: IEEE Region 10 Conference.

Intelligent Computing and Optimization: Proceedings of the 7th International Conference on Intelligent Computing and Optimization 2023, Volume 4. 2025. Springer Nature.

“Data Modeling and Integration for a Parking Management System with License Plate Recognition.” 2024. Intelligent Computing and Optimization, Springer Nature Switzerland.

“Design and Development of a Vision-Based Passenger Counter with GPS Tracking for Public Utility Buses Using Edge Computing.” 2022. Manufacturing Engineering and Management Master’s Theses, De La Salle University.

“Overhead View Bus Passenger Detection and Counter Using DeepSORT and Tiny-YOLOv4.” 2022. IEEE 14th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management.

“Vision-Based Crowd Counting and Social Distancing Monitoring Using Tiny-YOLOv4 and DeepSORT.” 2021. IEEE International Smart Cities Conference.

“A Maximization Model for Food Aid Distribution Using Integer Linear Programming.” 2021. IEEE 13th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management.