

KENO SIERDA JOSE

Electronics Engineering Researcher and Engineer

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SUMMARY

I am a final-year Bachelor of Science in Electronics Engineering student at the Polytechnic University of the Philippines, expected to graduate in September 2026. My research and engineering work covers quantum image representation, medical image processing, mixed-reality learning systems, AI-assisted authoring, enterprise automation, and ICT infrastructure. My experiences include academic research, open-source scientific software, immersive learning platforms, and enterprise systems development.

RESEARCH INTERESTS

Primary: Quantum image processing; qubit-qudit and qudit systems; quantum computer vision; medical imaging; image denoising
Applied: Artificial intelligence; computer vision; spatial computing; mixed reality; learning technology; human-agency-centered AI systems

EDUCATION

Polytechnic University of the Philippines <i>Bachelor of Science in Electronics Engineering</i> Sta. Mesa, Manila	2022 - 2026
Undergraduate thesis: Development of a Multi-scale Hierarchical Representation of Quantum Images as a Basis for Applied Noise Reduction of B-Scan OCT Images.	
Rizal National Science Highschool <i>Senior Highschool – STEM</i> Binangonan, Rizal	2020 - 2022
Rizal National Science Highschool <i>Junior Highschool</i> Binangonan, Rizal	2016 - 2020
Angono Christian School Inc. <i>Elementary</i> Angono, Rizal	2010 - 2020

WORK, RESEARCH, AND TECHNICAL EXPERIENCE

DADO Research and Experimental Development in Engineering and Technology <i>Sole Proprietor</i> Philippines	2026 - Present
Lead product and technical direction for an AI-assisted learning and personal knowledge workspace centered on source-grounded research, persistent evidence, interactive activities, and human agency.	
Polytechnic University of the Philippines <i>Student Assistant - PAILON XR and RECOVR</i> Manila, Philippines	2025 - Present
- Develop Project PAILON XR and Project RECOVR as mixed-reality learning systems for lesson authoring, VR/MR delivery, and interactive classroom activities. - Built the desktop lesson-authoring environment with AI-assisted content workflows, structured lesson management, interactive GLB/GLTF objects, and a library of 50+ procedural STEM assets. - Implemented host-server and tunnel-based lesson delivery, VR/MR client integration, AI NPCs, snap-point interactions, and plug-and-socket authoring. - Moved the development environment from Linux to Windows to align the desktop application with its intended deployment environment.	
DOST - Advanced Science and Technology Institute <i>On-the-Job Trainee - Quantum Innovations Laboratory</i> Quezon City, Philippines	2025
- Conducted research in quantum image processing, with focus on image representation using hybrid qubit-qudit systems and higher-dimensional quantum states. - Developed the Quadrant Amplitude Representation of Quantum Images (QARQI), which maps pixel intensity information to amplitude structures using quadrant encoding and polarity-magnitude registers. - Implemented simulation, decoding, reconstruction, ground-truth statevector verification, a command-line interface, tests, and documentation as an open-source Python package. - Used Qiskit, MQT Qudits, Python, OpenCV, numerical methods, and DOST-ASTI HPC COARE resources with SSH and SLURM workflows.	
Chiyoda Philippines Corporation <i>On-the-Job Trainee</i> Pasig, Philippines	2024
- Rotated across robotic process automation, service desk, network security, and in-house development units. - Developed a supplier-documentation RPA system using SQL for product record checks, safety dossier verification, and compliance report generation. - Built an AutoIt CCTV ping monitor with CSV logging and email alerts, and a Power Apps Security Audit Panel combining door-access logs, CCTV status, and controlled-site permissions. - Automated user-access expiry records and end-of-term revocation notifications. Delivered four internal automation systems using Power Automate and Python. - Assisted a Citrix Workspace fleet upgrade across more than 120 endpoints.	

MANUSCRIPTS

- Jose, K. S., Bautista, V. A., and Tubola, O. D. (2026). "Development of a Multi-scale Hierarchical Representation of Quantum Images as a Basis for Applied Noise Reduction of B-Scan OCT Images." Manuscript under review at ECTI Transactions on Computer and Information Technology (ECTI-CIT).
- Jose, K. S., and Tubola, O. D. (2026). "Quadrant Amplitude Representation of Quantum Images Using Hybrid Qubit-Qudit Systems." Manuscript with editor at Science & Technology Asia.

RESEARCH AND ENGINEERING PROJECTS

MHRQI - Multi-scale Hierarchical Representation of Quantum Images 2025 - Present

- Developed a Python framework for hierarchical quantum image encoding using multi-scale quad-tree decomposition and qudit-based state structures.
- Implemented image reconstruction, metric calculation, denoising extensions, and standardized comparison against BM3D, Non-Local Means, and Speckle-Reducing Anisotropic Diffusion.
- Packaged the framework with a command-line interface, documentation, tests, continuous integration, and medical OCT image workflows.

QARQI - Quadrant Amplitude Representation of Quantum Images 2025 - Present

- Created a quantum image representation framework that uses multi-level quantum systems for image encoding and supports ternary and higher order qudits.
- Developed structured simulation and result objects, automated decoding and reconstruction, CLI-based experimentation, and manual statevector verification.

TECHNICAL SKILLS

Programming: Python, C, C++, C#, JavaScript, TypeScript, Rust, Assembly, VBA, MATLAB, SQL, OpenQASM, HLSL, GLSL

Quantum Computing: Qiskit, MQT Qudits, quantum circuits, qubit-qudit systems, qudit systems, statevector simulation, quantum image representation

AI and Image Processing: Computer vision, OpenCV, YOLO, image reconstruction, medical imaging, denoising, evaluation metrics

Software and XR: React, Three.js, Electron, Node.js, GLB/GLTF, AI-assisted authoring, VR/MR delivery, Git

Systems and Infrastructure: Linux, Windows, HPC, SLURM, SSH, Cisco networking, SQL databases, Citrix Workspace

Engineering Tools: Arduino, AutoCAD, NI Multisim, LTspice, Festo FluidSIM, Cisco Packet Tracer

Enterprise Automation: Power Automate, Power Apps, AutoIt, RPA, service desk support, access lifecycle automation

AWARDS AND HONORS

- DOST Merit Scholarship Awardee, 2022.
- IECEP Datathon 2024 Regional Competition - 2nd Place.
- DOST-SEI 5th iMake.WEmake Research Competition, 2022 - Top 20 Finalist. 8th Placer
- DOST-SEI Tagisan Robotics Competition, 2019 - Semifinalist.
- Graduated with High Honors.
- PUP ECE Department - 2nd Semester Dean's Lister, A.Y. 2022-2023.
- PUP ECE Department - 1st and 2nd Semester President's Lister, A.Y. 2023-2024.
- PUP ECE Department - 1st and 2nd Semester Dean's Lister, A.Y. 2024-2025.

CERTIFICATIONS

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| • Quantum Machine Learning | • Basics of Quantum Information |
| • Quantum Enigmas | • Artificial Intelligence Fundamentals |
| • Introduction to AI Concepts | • Getting Started with Artificial Intelligence |
| • AI Literacy | • Enterprise Design Thinking Practitioner |
| • Fundamentals of Agile Project Management | • Fundamentals of Predictive Project Management |
| • Explore Emerging Tech | |