



Santana Yuda Pradata

[Website](#) · [Email](#) · [GitHub](#) · [Google Scholar](#) · [LinkedIn](#)

RESEARCH INTERESTS

Quantum computing and efficient classical simulation; theoretical quantum information; high-performance computing and energy-aware scheduling; stochastic and combinatorial optimization.

EDUCATION

Gadjah Mada University

Bachelor of Computer Science

Yogyakarta, Indonesia

Aug. 2022 – May 2026

- Cumulative GPA: 3.95/4.00; Major GPA: 3.99/4.00.

STANDARDIZED TEST SCORES

IELTS Academic

Oct. 2025

Overall: 8.5/9.0 | Listening: 9.0 Reading: 8.5 Writing: 8.0 Speaking: 8.0

SELECTED PUBLICATIONS

1. **Santana Yuda Pradata**, Muhammad Alfian Amrizal, Wiwit Suryanto, Ahmad Ridwan Tresna Nugraha, and Hiroyuki Takizawa. “Deep Learning-Integrated Pairwise-Qubit Subsystems for Highly Efficient Quantum Circuit Simulation.” *SCA/HPCAsia 2026*, pp. 130–141. [doi:10.1145/3773656.3773693](https://doi.org/10.1145/3773656.3773693).
2. Muhammad Alfian Amrizal, Raka Satya Prasasta, **Santana Yuda Pradata**, Kadek Gemilang Santiyuda, Reza Pulungan, and Hiroyuki Takizawa. “SPARS: A Reinforcement Learning-Enabled Simulator for Power Management in HPC Job Scheduling.” *SoftwareX*, vol. 34, 102693, 2026. [doi:10.1016/j.softx.2026.102693](https://doi.org/10.1016/j.softx.2026.102693).
3. Raka Satya Prasasta, **Santana Yuda Pradata**, Kadek Gemilang Santiyuda, Muhammad Alfian Amrizal, Reza Pulungan, and Hiroyuki Takizawa. “Co-Design of a Power State-Aware Scheduler and an Intelligent Power Manager for Energy-Efficient HPC Systems.” *SCA/HPCAsia Workshops 2026*, pp. 13–21. [doi:10.1145/3784828.3785163](https://doi.org/10.1145/3784828.3785163).
4. **Santana Yuda Pradata**, Muhammad Alfian Amrizal, Ahmad Ridwan Tresna Nugraha, and Reza Pulungan. “FaultNet-Sim: A C++ Simulator for Failure-Prone Wireless Sensor Networks.” *Software Impacts*, vol. 25, 100776, 2025. [doi:10.1016/j.simpa.2025.100776](https://doi.org/10.1016/j.simpa.2025.100776).
5. Rudy Prietno, **Santana Yuda Pradata**, Raka Satya Prasasta, Gemilang Santiyuda, Muhammad Alfian Amrizal, Tri Kuntoro Priyambodo, and Vincent F. Yu. “MedRoPax: A Comprehensive Software for Solving Heterogeneous Vehicle Routing Problem with 3D Loading Constraints and Cardboard Box Packing for Medical Supply Distribution.” *Software Impacts*, vol. 25, 100763, 2025. [doi:10.1016/j.simpa.2025.100763](https://doi.org/10.1016/j.simpa.2025.100763).
6. Thomas Budiarjo, **Santana Yuda Pradata**, Kadek Gemilang Santiyuda, Muhammad Alfian Amrizal, Reza Pulungan, and Hiroyuki Takizawa. “Improving the Efficiency of a Deep Reinforcement Learning-Based Power Management System for HPC Clusters Using Curriculum Learning.” *Supercomputing Asia 2025*. [doi:10.1145/3718350.3718359](https://doi.org/10.1145/3718350.3718359).
7. Muhammad Alfian Amrizal, **Santana Yuda Pradata**, Muthukathan Rajendran Sudha, Li Wang, and Reza Pulungan. “Investigating the Impact of Optimal Data Transfer Intervals on Failure-Prone Wireless Sensor Networks.” *IEEE Sensors Letters*, vol. 8, no. 7, pp. 1–4, 2024. [doi:10.1109/LSENS.2024.3414294](https://doi.org/10.1109/LSENS.2024.3414294).

Preprints

1. Reza Pulungan, Raka Satya Prasasta, **Santana Yuda Pradata**, Mursalim, Hiroyuki Takizawa, and Muhammad Alfian Amrizal. “A Smallest-Need-First Job Scheduling Framework with Adaptive Optimization of Idle Node Counts for Energy-Efficient HPC Systems.” [arXiv:2608.29656](https://arxiv.org/abs/2608.29656), 2026.

2. **Santana Yuda Pradata**, M. 'Anin Nabail 'Azhiim, Hendry Minfui Lim, and Ahmad Ridwan Tresna Nugraha. “Efficient Classical Computation of Single-Qubit Marginal Measurement Probabilities to Simulate Certain Classes of Quantum Algorithms.” [arXiv:2411.06822](https://arxiv.org/abs/2411.06822), 2024.

TALKS AND PRESENTATIONS

SCA/HPCAsia 2026 – Quantum Algorithms & Data Access	Jan. 2026
Presented first-authored research on “Deep Learning-Integrated Pairwise-Qubit Subsystems for Highly Efficient Quantum Circuit Simulation,” in the peer-reviewed research session at SCA/HPCAsia 2026 in Osaka, Japan.	
International Conference on Science and Technology (ICST) 2023	Nov. 2023
Presented research on deep-learning quantization at the Computer, Electronics, and Information Technology symposium in Yogyakarta, Indonesia.	

HONORS AND AWARDS

Supercomputing Asia 2025	Mar. 2025
<i>Best Technical Paper Award</i>	<i>National Supercomputing Centre Singapore / SCA 2025</i>
GEMASTIK XVII – ICT Scientific Paper	Sep. 2024
<i>Best Paper Award</i>	<i>Balai Pengembangan Talenta Indonesia</i>
Dexa Group Digihatch 2023	Nov. 2023
<i>National Finalist</i>	<i>Dexa Group</i>
GEMASTIK XVI – ICT Scientific Paper	Sep. 2023
<i>National Finalist</i>	<i>Balai Pengembangan Talenta Indonesia</i>
GEMASTIK XV – Programming	Nov. 2022
<i>National Finalist</i>	<i>Balai Pengembangan Talenta Indonesia</i>

RESEARCH EXPERIENCE

Research Assistant, National Research and Innovation Agency (BRIN)	Aug. 2024 – Jan. 2025
- Worked with Dr. Ahmad Ridwan Tresna Nugraha on efficient classical simulation of quantum computations and quantum-circuit modeling. - Research contributed to work on scalable approximations of quantum circuits, including the first-authored SCA/HPCAsia 2026 paper on pairwise-qubit subsystem simulation.	
Research Assistant, Gadjah Mada University	Sep. 2023 – Aug. 2026
- Conducted research with Muhammad Alfian Amrizal, Ph.D. and Prof. Mhd. Reza M. I. Pulungan across high-performance computing, wireless sensor networks, optimization, and efficient machine-learning systems. - Co-authored peer-reviewed work on energy-aware HPC scheduling and power management, failure-prone wireless sensor networks, and logistics optimization software.	

TEACHING EXPERIENCE

Teaching Assistant, Gadjah Mada University	Jan. 2024 – Aug. 2025
Supported courses in digital systems, computer architecture, and operating systems; prepared or graded 25+ assignments for 200+ students.	

TECHNICAL SKILLS

Programming: C, C++, C#, Python
Scientific: Qiskit, QuTiP, PennyLane, NumPy, TensorFlow, TensorRT, OpenCV