

# Adi Saputra

Malang, East Java | [asptr00@gmail.com](mailto:asptr00@gmail.com) | +6285857421704 | [linkedin](#) | [Github](#)

Master's student in Physics at Universitas Indonesia with research experience in quantum computing, quantum machine learning, and scientific computing. Experienced in developing quantum algorithms and QML models using Python and Qiskit through research at BRIN's Quantum Physics Research Center, with additional experience in hybrid ML-QML research and high-performance computing.



## Experience

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| <b>High-Performance Computing (HPC) Cakra Administrator – Department of Physics</b> <ul style="list-style-type: none"><li>Monitored and managed HPC resource allocation and utilization.</li><li>Performed regular system maintenance and handled HPC software/hardware installations.</li></ul>                                                                                                                                                                                               | <b>2025 - Present</b> |
| <b>Teaching Assistant – Applicative Computer Programming Course</b> <ul style="list-style-type: none"><li>Guided and mentored 32 students in utilizing Python for educational applications.</li><li>Instructed students on using LaTeX for technical report writing and Markdown in Visual Studio Code.</li></ul>                                                                                                                                                                              | <b>January, 2026</b>  |
| <b>Linux Bootcamp Assistant</b> <ul style="list-style-type: none"><li>Taught Linux fundamentals and demonstrated its practical applications in Big Data use cases.</li></ul>                                                                                                                                                                                                                                                                                                                   | <b>January, 2026</b>  |
| <b>Teaching Assistant – Advanced Computational Physics Course</b> <ul style="list-style-type: none"><li>Instructed students on creating and managing Python virtual environments.</li><li>Taught Python programming tailored for solving complex physics problems.</li></ul>                                                                                                                                                                                                                   | <b>October, 2025</b>  |
| <b>Speaker – Group Meeting of Computational and Theoretical Physics Expertise Group</b> <ul style="list-style-type: none"><li>Delivered introductory lectures and hands-on sessions on Machine Learning and Quantum Machine Learning.</li><li>Assisted students in understanding and implementing ML and QML algorithms.</li></ul>                                                                                                                                                             | <b>October, 2025</b>  |
| <b>Student Creativity Program (PKM - AMLI)</b> <ul style="list-style-type: none"><li>Secured research funding for the proposal titled "Optimization of Alzheimer's Diagnostic Analysis using Machine Learning and Quantum Machine Learning Fusion on Complex Neuroimaging Data".</li><li>Awarded Best Presenter (1st Winner) in Room 10 during the progress report presentation.</li><li>Developed a hybrid Machine Learning and Quantum Machine Learning fusion model using Python.</li></ul> | <b>October, 2025</b>  |
| <b>Laboratory Assistant – Physics for Biology</b> <ul style="list-style-type: none"><li>Directed and supervised 30 students in conducting experimental procedures according to the module.</li><li>Validated students' measurement data, ensuring 90% of the collected data met the established quality standards.</li><li>Provided constructive feedback, resulting in 85% of students reporting an improvement in practical laboratory skills.</li></ul>                                     | <b>October, 2025</b>  |
| <b>Qiskit Global Summer School</b> <ul style="list-style-type: none"><li>Participated in an intensive 1-month seminar focused on Quantum Computing.</li><li>Solved rigorous assignments regarding Quantum Computing algorithms using Python.</li><li>Collaborated with peers to solve complex tasks under the guidance of mentors.</li></ul>                                                                                                                                                   | <b>August, 2025</b>   |
| <b>Internship – Quantum Physics Research Center, BRIN</b> <ul style="list-style-type: none"><li>Conducted a 6-month research study and practical application in Quantum Computing and Quantum Machine Learning using Qiskit.</li><li>Built quantum gate algorithms and Quantum Machine Learning models using Python.</li></ul>                                                                                                                                                                 | <b>February, 2025</b> |
| <b>Laboratory Assistant – Electronics II</b> <ul style="list-style-type: none"><li>Guided students through experimental procedures in accordance with lab manuals.</li><li>Conducted preliminary checks on data collected by students, achieving a 95% data accuracy rate.</li><li>Provided evaluations and feedback, leading to an 80% increase in students' conceptual understanding.</li></ul>                                                                                              | <b>December, 2024</b> |
| <b>Mentor – Error Theory and Occupational Safety Seminar, Department of Physics</b> <ul style="list-style-type: none"><li>Mentored 10 incoming freshmen for 1 month in executing safe experimental procedures, achieving a 90% participant satisfaction rate based on feedback surveys.</li></ul>                                                                                                                                                                                              | <b>October, 2024</b>  |
| <b>Head of Information and Communication Division – HMD Fisika Nucleon</b> <ul style="list-style-type: none"><li>Led and directed division members for 1 year in executing work programs, maintaining a 90% member participation rate.</li><li>Supervised the execution of departmental programs, successfully delivering 5 completed projects within the annual term.</li></ul>                                                                                                               | <b>January, 2024</b>  |

## Skills

- Quantum & Computing: Quantum Machine Learning (Python/Julia), Machine Learning (Python), Quantum Algorithms, High-Performance Computing (HPC), Molecular Dynamics, Linux.
- Programming Languages & Tools: Python, Julia, MATLAB, Git, GitHub, LaTeX, Markdown.
- Productivity & Design: Microsoft Excel, Google Docs, Tableau, SQL, Photoshop, Illustrator, Corel Draw, Canva.

# Certifications

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- Introduction to PennyLane Certificate (PennyLane)
- Fundamentals of Quantum Algorithms (IBM)
- Quantum Machine Learning (IBM)
- Variational Algorithm Design (IBM)
- Quantum Chemistry with Variational Quantum Eigensolver (IBM)
- Git and GitHub MasterClass: Git Workflow, Commands (Udemy)
- Udemy Certified Data Analyst Skillpath: Zero to Hero in Excel, SQL & Python (Udemy)
- Udemy Certified Become a Data Analyst: Excel, SQL & Tableau - 3-in-1 Bundle (Udemy)
- Advertising Professional Competency Certificate with Digital Marketing Specialization

# Educations

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- Universitas Negeri Malang (2022 - 2026)
- Bachelor of Science (B.Sc.) in Physics
- Undergraduate Thesis : Optimization of Classical and Quantum Machine Learning Models for Weather Forecasting in Indonesia
- Universitas Indonesia (2026 - Present)
- Master of Science in Physics

# Projects

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- Optimization of Machine Learning and Quantum Machine Learning for Weather Forecasting in Indonesia
- Molecular Dynamic fot Phase Change Material (PCM)
- Optimization of Alzheimer's Diagnostic Analysis using Machine Learning and Quantum Machine Learning Fusion on Complex Neuroimaging Data
- Quantum Machine Learning with Julia
- Deep Learning for Ground-Penetrating Radar (GPR) Inversion
- Quantum GANs on Complex Images