Muhammad Reesa Rosyid

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Objective

Aspiring computer science professional with a robust foundation in machine learning, quantum computing, and data-driven research, complemented by hands-on experience in developing innovative solutions for real-world problems. Passionate about harnessing cutting-edge technologies to address complex challenges, from AI-driven healthcare innovations to sustainable environmental management systems. Eager to contribute to collaborative, forward-thinking projects that push the boundaries of technological advancements and create meaningful impacts in both academic and industrial domains.

Education

2020-2024

Universitas Dian Nuswantoro
Bachelor's Degree on Computer Science

GPA: 3.77/4.00
Graduated: Cum Laude
Thesis: "Implementation of Quantum Machine Learning in Predicting Corrosion Inhibition Efficiency of Expired Drugs"

Honors and awards

Jul 2023

Best Capstone Project Bangkit 2023 Batch 1

Recognized as one of the Best 68 Product-based Capstone Projects out of 787 projects in Bangkit 2023, a prestigious Google-led program in collaboration with GoTo and Traveloka. The project, "KukuKu - Nail Disease Detection," focused on enhancing human healthcare and wellbeing through AI-driven solutions.

Experience

Sep 2023 – Present **Research Center of Quantum Computing and Materials Informatics,** Semarang
Research Assistant (Part-time, On-site)

- Acquired foundational knowledge of quantum computing principles and explored their practical applications in machine learning.
- Assisted lecturers in research on machine learning and quantum machine learning applications in material science data analysis.
- Successfully published articles in national journals indexed by SINTA 3 and international journals indexed in Q2.

Mar 2024 – Jul 2024 **Udinus Center of Excellence,** Semarang
Research Assistant (Internship, On-site)

- Assisted lecturers in research focused on waste management systems.
- Collected sample data on compost waste from DLH, Kendal Regency.
- Preprocessed the compost waste data to ensure its readiness for machine learning model development.
- Designed and developed a prototype web application dashboard for integrating the machine learning model and visualizing the data effectively.

Aug 2023 – Sep 2023

id/x partners, Jakarta
Data Scientist (Internship Based on Project, Remote)

- Successfully developed a machine learning model to detect credit card fraud using various machine learning algorithms.

Feb 2023 – Jul 2023

Bangkit Academy led by Google, Tokopedia, Gojek, & Traveloka, Bandung
Machine Learning Cohort (Bootcamp, Remote)

- Completed a 6-month intensive Machine Learning program, mastering foundational concepts and applying ML techniques such as regression, classification, clustering, and deep learning using Python, TensorFlow, scikit-learn, and Pandas.
- Developed and applied a machine learning model for health-related applications, specifically for nail disease detection, focused on enhancing human healthcare and well-being through AI-driven solutions.
- Our capstone was successfully honored as one of the top 68 product-based capstone projects out of 787 in this program.

Aug 2022 – Dec 2022

Hacktiv8 Indonesia, Jakarta
Data Scientist Cohort (Bootcamp, Remote)

- Acquired comprehensive knowledge of data science, including Python programming, descriptive and inferential statistics, data visualization, machine learning model development, and model deployment into web applications.
- Successfully completed a capstone project by developing and deploying predictive and analytical models, including price estimation, weather prediction, disease risk classification, and sales segmentation, showcasing end-to-end data science workflows.

Publications

Rosyid, M. R., Mawaddah, L., Santosa, A. P., Akrom, M., Rustad, S., & Dipojono, H. K. (2024). Implementation of quantum machine learning in predicting corrosion inhibition efficiency of expired drugs. Materials Today Communications, 40. https://doi.org/10.1016/j.mtcomm.2024.109830

Rosyid, M. R., Mawaddah, L., & Akrom, M. (2024). Investigasi Model Machine Learning Regresi Pada Senyawa Obat Sebagai Inhibitor Korosi. Jurnal Algoritma, 21(1), 332–342. https://doi.org/10.33364/algoritma/v.21-1.1598

Professional training

Dec 2024	**Data Engineering Specialization, IBM** Credential ID: 4UOBSZFVI5KO
Jul 2023	**Natural Language Processing Specialization, DeepLearning.AI** Credential ID: WAV9HUUP4DM2
Jun 2023	**TensorFlow: Advanced Techniques Specialization, DeepLearning.AI** Credential ID: 44GPS8X5AHGH
May 2023	**TensorFlow: Data and Deployment Specialization, DeepLearning.AI** Credential ID: PZMXCYVUHF5A
Apr 2023	**TensorFlow Developer Specialization, DeepLearning.AI** Credential ID: W68Z3TXPWYLW
Apr 2023	**Machine Learning Specialization, Stanford University** Credential ID: 77ZBJZZB4EDF
Mar 2023	**IT Automation with Python Specialization, Google** Credential ID: DGHYKRB3KV5V
Mar 2023	**Mathematics for Machine Learning Specialization, Imperial College London** Credential ID: 5KQ9NEBZ3VLJ

Projects

Oct 2022 – Aug 2022	**Data Science Project Capstone** This project involved developing several machine learning models and deploying them on a website. There were four main projects, each focusing on different areas: predicting Cab/Taxi Prices using Linear Regression, forecasting Rainfall in Australia using Classification, anticipating Heart Failure using Ensemble Classification Models, and performing Customer Segmentation using Clustering techniques.
May 2023 – Jun 2023	**KukuKu - Nail Disease Detection** The KukuKu Mobile App is designed as a solution for detecting nail diseases, employing cutting-edge technologies such as CNN, Tensorflow, Kotlin, and Google Cloud Platform development. With this app, users can conveniently capture images of their nails and have them analyzed for early signs

	of diseases. By leveraging advanced image analysis algorithms, our model can provide valuable insights into potential health issues based on the condition of the user's nails.
Aug 2023 – Sep 2023	**Credit Risk Prediction Using Machine Learning Model** The development of credit risk detection stemmed from the aftermath of the 2008 financial crisis, as regulatory reforms and technological advancements prompted financial institutions to enhance their risk assessment methods. By merging traditional financial data with alternative sources and embracing machine learning and AI, credit risk detection systems emerged to provide a comprehensive view of borrowers' credit profiles and behavior. These systems enable more informed lending decisions, reduce default risks, and foster fairer lending practices. Looking forward, ongoing advancements in AI and data sharing are expected to drive even more sophisticated risk assessment techniques, bolstering financial stability and efficiency.
Mar 2024 – Jul 2024	**Prototype Waste Management Systwm Web Application Dashboard** This project aimed to develop a prototype web application dashboard to support research on waste management systems. The application integrated a machine learning model to analyze compost waste data collected from the Department of Environmental Affairs (DLH) in Kendal Regency. Key features of the dashboard included data preprocessing, predictive analytics, and user-friendly visualizations to aid in decision-making. The project showcased the practical application of technology in environmental management, combining data-driven insights with an intuitive interface for effective communication of results.
Feb 2024 – Aug 2024	**Implementation of Quantum Machine Learning in Predicting Corrosion Inhibition Efficiency of Expired Drugs.** This project investigates the use of quantum machine learning (QML) to predict the corrosion inhibition efficiency (CIE) of expired pharmaceutical compounds. A QSPR model is employed, using features from density functional theory (DFT) calculations as input and experimentally derived CIE values as targets. Among the tested models, the quantum support vector machine (QSVM) outperforms the variational quantum circuit (VQC) and quantum neural network (QNN), achieving the best metrics with an RMSE of 4.36, MAE of 3.19, and MAD of 3.08. The study highlights the importance of larger datasets and underscores QML's potential in advancing anti-corrosion material research, laying the groundwork for future studies in this area.

Languages

Bahasa Indonesia	Native language
Javanese	Native language

	English	Advance Reading, Novice Speaker, Intermediate Listener and Writing

Skills

Soft Skills		• Problem Solving • Communication and Team Collaboration • Critical Thinking • Time Management
Hard Skills		• Data Analysis • Machine Learning • Database • Research Project • Basic Quantum Computing • Project Management
	Programming	• Python • SQL • NoSQL • Linux Script • HTML • CSS • JavaScript
	Frameworks & Libraries	• Tensorflow • Qiskit • Sickit Learn • Streamlit
	Application	• Visual Studio Code • Docker • Microsoft Office • Github • PowerBI • Superset • Airflow • Kafka