# RAMADHAN OKTOVIVIAN MUHAMMAD

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Deeply passionate about data science, machine learning, software engineering, and possesses a solid understanding of project management methodologies including Scrum, Agile, and SDLC. My academic journey has equipped me with a robust foundation in machine learning, honing skills in data analysis and model development

## EDUCATION

Telkom University 2021-now
**Bachelor, Informatics. GPA [3.94/4.00]**
Bandung, Indonesia

SMAN 2 Lamongan 2019 - 2021
**Natural Science (IPA), GPA [93.2/100]**
Lamongan, Indonesia

## EXPERIENCES

Data Science Research Group Telkom University 2024
**Research Assistant**

- Collected and prepared over 1000 'Aksara' datasets for Optical Character Recognition (OCR), ensuring data integrity and relevance to research objectives.
- Conducted meticulous data preprocessing tasks, including data cleaning, normalization, and formatting, to optimize the accuracy of OCR algorithms.
- Collaborated with the research team to identify and address data inconsistencies and challenges, ensuring high-quality datasets for analysis.
- Assisted in developing and implementing data preparation pipelines, streamlining the process and enhancing efficiency in dataset acquisition and preparation.

Smartpath 2024
**Project Manager Intern**

- Managed two projects simultaneously, focusing on KPI web project and main website improvement, ensuring alignment with organizational goals.
- Led two teams of five members each, fostering collaboration and ensuring timely project delivery.
- Facilitated the sprint process and maintained the momentum of the Scrum framework, ensuring efficient project execution.

Telkom University 2023 - 2024
**Teaching Assistant for Discrete Math and Algorithmic Strategy**

- Corrected tests for two classes, totaling over 80 students in the Strategic Algorithm class, ensuring accurate evaluation and feedback for student progression
- Corrected tests for more than 40 students in the Discrete Mathematics class, maintaining consistency and fairness in grading practices.
- Delivered lectures four times throughout the semester, effectively conveying complex concepts in Strategic Algorithm and Discrete Mathematics to enhance student understanding and engagement.

## PROJECTS

**Hotspot Detection in Whole-body Bone Scan via Deep Learning** 2024

- Worked with a dataset of 600 images, annotating 50% of them as containing hotspots, crucial for training and evaluation purposes.
- Conducted annotation to label images as containing hotspots or not, ensuring accuracy and consistency in the labeling process.
- Led the construction of two U-Net++ models with distinct architectures to facilitate performance comparison.
- Designed each model considering parameters such as layer depth, filter size, and filter count per layer, optimizing architecture for effective feature extraction.

**Whole-body Bone Scan Segmentation via Deep Learning** 2024

- Contributed to the development and annotation of a dataset comprising plain whole-body bone scan images obtained from the Faculty of Medicine, Universitas Padjajaran.
- Selected a subset of the best segmented images from the pool of 600 for training purposes.
- Trained the selected subset using a semi-supervised approach, incorporating 36 manually segmented images for improved accuracy and reliability in the segmentation process.
- Implemented the U-Net architecture to ensure precise segmentation results, contributing to the development of accurate models for hotspot detection in bone scan images.

**Predicting Serum Creatinine Levels in Heart Failure Patients with Neural Networks** 2023

- Conducted comparative analysis between Support Vector Regression (SVR) and Artificial Neural Network (ANN) methods on a dataset comprising medical records of 299 patients with heart failure.
- Explored hyperparameters of both methods to optimize model performance, considering factors such as kernel type, regularization parameters, and neural network architecture.
- Utilized scikit-learn library for model training, leveraging its comprehensive set of tools for machine learning tasks.

**Movie Recommender System using Matrix Factorization** 2023

- Developed a recommendation system for four films utilizing a dataset containing 46,638 images.
- Implemented matrix factorization techniques to create a collaborative filtering model, enabling personalized recommendations based on user preferences and item characteristics.
- Conducted thorough experimentation to evaluate the impact of various parameters on the model's performance, including factors such as matrix size, regularization strength, and learning rate.

**Data Online News Popularity Classification using Ensemble Learning** 2023

- Implemented a classification task to determine the popularity level of news articles based on their features.
- Conducted preprocessing on a dataset comprising 39,644 instances, ensuring data quality and consistency for subsequent analysis.
- Utilized a decision tree algorithm as the foundation for the initial model, leveraging its interpretability and ease of implementation.
- Employed Adaboost (Adaptive Boosting) technique to enhance the predictive performance of the model, improving its accuracy and robustness in predicting news article popularity levels.

## LABORATORY AND ORGANIZATION

Mobile Innovation Laboratory 2023 – 2024

**Digital Business and Data Analytics Mentor**

- Taught and guided over 40 students in study groups, fostering collaborative learning and skill development.
- Delivered weekly lectures throughout the semester, covering topics such as digital business, project management, and data analytics to provide students with comprehensive knowledge and practical insights.
- Provided mentorship and support to students, facilitating their understanding and application of concepts in real-world scenarios, thereby enhancing their proficiency in digital business and data analytics.

LEAD program by DINOTIS 2022 – 2023

**Scrum Master**

- Led the optimization of the 'Rate Card' feature for the Dinotis Mobile Application, ensuring its functionality and usability through thorough user research.
- Conducted user research to validate and refine the Rate Card feature, gathering feedback and insights to enhance user experience and meet customer needs effectively.
- Prepared and delivered weekly reports to the product owner, providing transparent updates on project progress, impediments, and accomplishments

## SKILLS & OTHERS

**Skills:** Python, Pandas, Matplotlib, Tensorflow, Keras, C++, Java, Jira, MS Office, Github
**Additional Skills:** Data Analysis, Recommender System, Digital Image Processing, Machine Learning, Project Management, Scrum, Agile, Digital Business, Data Analysis, UI/UX research, Wireframing, Flowchart, User Flows Diagram, UML Diagrams, Use Case Diagram, Scenario Case Diagram.

## HONOR - AWARDS

- **Startup Grant:** passed the funding in startup incubation — Bandung Techno Park
- **1st Winner:** Web Development Competition — LLDIKTI Wilayah 4
- **1st Winner:** Business Plan Technology Euphoria — Sriwijaya University
- **2nd Winner:** UI/UX Competition Technology Euphoria — Sriwijaya University
- **2nd Winner:** DIGIX DIGICOMP Business Competition — University of Padjadjaran
- **2nd Winner:** Crenovation Business Competition 2023 — Telkom University
- **2nd Winner:** Crenovation x PKM Business Competition 2022 — Telkom University
- **2nd Winner:** AISC UI/UX Competition — Telkom University