

SALA JALALUDIN

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PROFESSIONAL SUMMARY

Statistics student at Universitas Sultan Ageng Tirtayasa focused on data science and data-driven modeling. Experienced in building and publishing an open-source Python package (FramePeek, available on PyPI) for automated exploratory data analysis, as well as applying statistical analysis and machine learning algorithms (unsupervised learning: K-Means, GMM, Hierarchical Clustering, PAM, DBSCAN) to a large-scale customer segmentation project (over 1 million transactions) and a customer churn analysis. Strong foundation in inferential statistics, structured analytical and problem-solving skills, and experience leading scientific and student organizations. Seeking to build a career as a Data Scientist in a data- and research-driven environment.

EDUCATION

- Universitas Sultan Ageng Tirtayasa** — Statistics Program | GPA: 3.74 / 4.00 2024 – Present
- Relevant coursework: Descriptive & Inferential Statistics, Regression Analysis & Statistical Modeling, Programming for Data Analysis (Python & R)
- SMAN 1 Bayah** — Mathematics and Natural Sciences 2021 – 2024
- Strong foundation in mathematics and quantitative logic; active in scientific organizations (KIR, OSIS)

DATA PROJECTS

- FramePeek** — Open-Source Python Package for Pandas EDA 2026
- Designed and built an open-source Python package to automate exploratory data analysis on pandas DataFrames, published on PyPI (pip install framepeek)
 - Built a profile function that generates a structured data profile: overview, missing values, duplicates, outliers, correlations, and data quality warnings
 - Applied unit testing (pytest), type checking (mypy), and linting (ruff) with a 100% code coverage target
 - Project links: [GitHub](#) | [PyPI](#)

RFM-Based Customer Segmentation

- Performed customer segmentation on the Online Retail II dataset (1,067,371 transactions, 5,878 unique customers) using the RFM approach
- Applied and compared five unsupervised learning algorithms (K-Means, GMM, Hierarchical Clustering, PAM/K-Medoids, DBSCAN), evaluated with Silhouette Width, Davies-Bouldin Index, and Calinski-Harabasz Index
- Built the analysis pipeline in R and Python, with a complete report in R Markdown and Jupyter Notebook format

Customer Churn Analysis

- Conducted EDA to identify key factors behind customer churn, covering user activity, subscription duration, payment method, and region
- Calculated churn rate and inter-variable correlation using Python and SQL
- Generated data-driven insights as a basis for customer retention strategy recommendations

TECHNICAL & ANALYTICAL SKILLS

Programming & Tools

- Python (pandas, numpy, scikit-learn, matplotlib, seaborn) — data cleaning, EDA, machine learning, data visualization
- SQL — DDL (CREATE, ALTER, DROP), JOINS (INNER/LEFT/RIGHT/FULL), database design (ERD, normalization 1NF–3NF), analytical queries and aggregation
- R (tidyverse, factoextra, cluster, mclust, fpc, dbscan) — statistical analysis and machine learning
- pytest, mypy, ruff, setuptools — unit testing, type checking, linting, and Python packaging
- Git & GitHub — version control and project documentation

Machine Learning & Statistics

- Unsupervised learning: K-Means, Gaussian Mixture Model (GMM), Hierarchical Clustering, PAM/K-Medoids, DBSCAN
- Model evaluation: Silhouette Width, Davies-Bouldin Index, Calinski-Harabasz Index, Shadow Value
- Inferential statistics: hypothesis testing, regression analysis, statistical modeling
- Exploratory Data Analysis (EDA), feature understanding, data preparation

Soft Skills

- Data interpretation for business decision-making
- Insight development and report writing
- Analytical thinking and problem-solving
- Teamwork, coordination, and leadership

WORK EXPERIENCE

- Teaching Assistant** — Database & SQL, Statistics Laboratory, UNTIRTA 2026
- Facilitated Database & SQL practicum sessions for Statistics students, covering DDL, database design (ERD & normalization), JOINS, and R–MySQL integration
- Operations Assistant & Cashier** — Family Retail Business, *Bayah, Lebak* 2021 – 2024
- Served daily customers and managed stock quality, strengthening communication, problem-solving, and operational responsibility

ORGANIZATIONAL EXPERIENCE

- Staff, Department of Interest & Talent Development** — HIMASTA UNTIRTA 2025 – 2026
- Contributed to planning interest and talent development programs for Statistics students and coordinated department activities
- Chairman, KIR Angkasa** — SMAN 1 Bayah 2023 – 2024
- Initiated a new scientific extracurricular and led the planning and execution of organizational work programs
- Vice Chairman, KILAS & Member, OSIS** — SMAN 1 Bayah 2023
- Supported strategic decision-making and coordinated academic and school-wide activities

ACHIEVEMENTS

- 1st Place, Essay Competition — Semarak HAKORDIA Banten (2022), theme: anti-corruption awareness
- 3rd Place, Journalism Competition — FLS3N (2023)

TRAINING & CERTIFICATIONS

- How to Clean Data with Python — Codecademy (data cleaning techniques, missing-value handling, data preparation)

LANGUAGES

- Indonesian — Native; English — Basic Working Proficiency