Mohammad Hamid Asnawi, S.Stat

Bandung, Indonesia | hamid03082002@gmail.com | (+62)82120700341 | mhamidasn.github.io
linkedin.com/in/mhamidasn | github.com/mhamidasn | google-scholar | codewars.com/users/mhamidasn

I am a Google Certified TensorFlow Developer and a Bachelor of Statistics from Universitas Padjadjaran, with a strong passion for the fields of AI and data. Through my project work, research papers, work experience, and participation in competitions, I have cultivated diverse expertise in AI, machine learning, data science, data analysis, and data consulting. My commitment to knowledge sharing is evident through my research papers, and I take pleasure in continuously exploring the ever-evolving realm of technology through various certified platforms. With a keen interest in advancing AI and data-driven solutions, I am determined to contribute my skills and creativity to tackle real-world challenges and drive innovation in these fields.

EDUCATION

Sarjana Statistika (S.Stat.) – Bachelor of Statistics
Universitas Padjadjaran, Bandung, Indonesia
- Graduated: January 2023
- GPA: 3.89 out of 4.00 (cumlaude)
- Standard Program Length: 4 Years
- Completed in: 3.5 Years
- Bachelor Thesis: Lung and Infection CT-Scan-Based Segmentation with 3D UNet Architecture and Its Modification
- Language Taught: Bahasa Indonesia
- Achievements:
  - Honored as the graduate with the highest GPA in the Faculty of Mathematics and Natural Sciences
  - Succesfully published various papers, including the bachelor thesis published in MDPI Healthcare
  - Served as a teaching assistant for Computer Programming, Database, and Multivariate Data Analysis 1 classes.
- Organization/Extracurriclar Activities:
  - Head of STATIS – Statistics Badminton (January 2022 – December 2022).
  - Deputy Head of Badan Perwakilan Anggota (Legislative Organization) of Statistics Students at UNPAD (January 2021 – December 2021).
  - Deputy Head of STATIS – Statistics Badminton (January 2021 – December 2021).

High School Diploma
State Senior High School 10 of Bandung (SMAN 10 Bandung)
- Graduated: May 2019
- Major: Mathematics and Natural Sciences
- Organization/Extracurricular Activitues:
  - Actively involved in the OSIS (Student Council) at SMAN 10 Bandung, serving as the Chief Secretary for the Language and Culture Department.
  - Served as the Chief Project Officer for the FUKUROU II event, a provincial-level competition and Japan festival.

Machine Learning Path Student – (non-formal studies)
Bangkit Academy led by Google, Tokopedia, Gojek, & Traveloka
- Program Duration: One Semester (6 months)
- Final Score: 93.05 out of 100
- Language Taught: English
- Final Project: SkinGortihm: Know What You Need
- Achievement:
  - Final project reached the final round (top 53) out of 433 submissions.

WORK EXPERIENCE

Research Center for Artificial Intelligence and Big Data (AIDA) Universitas Padjadjaran (Bandung, Indonesia)
AIDA, a prominent research center within Universitas Padjadjaran, is dedicated to pioneering advancements in the vast domains of artificial intelligence and data science.
- **Associate Researcher** (May 2023 – Present)
  - Lead and conduct research at the intersection of computer vision and natural language processing, resulting in two research papers currently under review:
    - "The Combination of Contextualized Topic Model and MPNet for User Feedback Topic Modeling " (Currently under review in IEEE Access)
    - "Enhancing Lung Infection 3D Projection Segmentation with 2D U-Shaped Deep Learning Variants" (Currently under review in Applied Sciences)
  - Mentor and supervise three intern research groups spanning diverse fields, including medical image analysis, pain recognition, and chatbot technology, overseeing a total of six research projects.

- **AI & Big Data Research Assistant** (June 2022 – May 2023)
  - Conducted an experiment and research about computer vision, particularly 3D image segmentation on the COVID-19 CT-scan.
  - Wrote 2 research papers entitled "Lung and Infection CT scan-based Segmentation with 3D UNet Architecture and its Modification" and "UNet vs. LinkNet for Segmentation: Which One is Better for Visualizing the 3D Lung Construction of COVID-19?".
  - Developed and implemented a highly efficient data pipeline and ML modeling pipeline with MLOps integration, enabling automated parameter experiments and enhancing overall productivity.

Telkomsel (Jakarta, Indonesia)
Telkomsel, Indonesia's premier telecommunications giant, renowned for its diverse range of cutting-edge telecommunication products and services.

- **Data Scientist Intern (August 2022 – December 2022)**
  - Created 12 unsupervised Natural Language Processing (NLP) machine learning models to compare and find the best model for the topic modeling project.
  - Created a machine learning pipeline with the Kedro framework for the topic modeling code to make it more reproducible, maintainable, and modular.
  - Used kedro-mlflow to implement MLops to track the modeling experiments much easier.
  - Wrote 2 medium article about the introduction to kedro-mlflow and kedro-fastapi.

Jatinangor Research Center (Sumedang, Indonesia)
Jatinagor Research Center is a premier provider of consultancy and analytical services, specializing in data and statistical problem-solving.

- **Data Analyst and Data Consultant (January 2021 – December 2022)**
  - Assisted clients in solving their data analysis issues. I received a diverse range of clients with various problems, mostly related to their theses, and aided them in analyzing their data using a variety of statistical methods.
  - Tutored my clients on the appropriate methods and analytical steps to fit their particular problem

Universitas Padjadjaran (Bandung, Indonesia)
Universitas Padjadjaran, a premier institution in Indonesia renowned for its excellence in education, research, and innovation.

- **Teaching Assistant (February 2021 – December 2021)**
  - Facilitated learning as a teaching assistant for various laboratory classes, including:
    - Computer programming laboratory for freshman statistics Students (2021/2022)
    - Multivariate Data Analysis 1 Laboratory for sophomore statistics students (2021/2022)
    - Database laboratory for freshman statistics students (2020/2021)

RESEARCH, PUBLICATION, AND CONFERENCE EXPERIENCE

Paper Research Project

- **Published**
  Please check my Google Scholar account for full information and manuscripts of each paper: **Publication Archive** or my **Scholar Account**

  1. Title: The Combination of Contextualized Topic Model and MPNet for User Feedback Topic Modeling
     Published in: IEEE Access – 14 November 2023
     Written in: English
     Authorship: First Author
     DOI – Link: 10.1109/ACCESS.2023.3332644 – [LINK]

  2. Title: Enhancing 3D Lung Infection Segmentation with 2D U-Shaped Deep Learning Variants
     Published in: MDPI Applied Sciences – 24 October 2023
     Written in: English
     Authorship: Second Author
     DOI – Link: 10.3390/app132111640 – [LINK]

  3. Title: Lung and Infection CT-Scan-Based Segmentation with 3D UNet Architecture and Its Modification
     Published in: MDPI Healthcare – 10 January 2023
     Written in: English
     Authorship: First Author
     DOI – Link: 10.3390/healthcare11020213 – [LINK]

  4. Title: A Deep Learning Review of ResNet Architecture for Lung Disease Identification in CXR Image
     Published in: MDPI Applied Sciences – 8 December 2023
     Written in: English
     Authorship: Fifth Author
     DOI – Link: 10.3390/app132413111– [LINK]

5. Title: The ensemble distance on model-based clustering for regions clustering based on rainfall: The case of rainfall in West Java Indonesia
   Published in: International Journal of Data and Network Science – 21 November 2023
   Written in: English
   Authorship: Sixth Author
   DOI – Link: 10.5267/j.ijdns.2023.11.015 – [LINK]

6. Title: A Comparison of Support Vector Machine and Naïve Bayes Classifier in Binary Sentiment Reviews for PeduliLindungi Application
   Published in: IEEE under the 2021 International Conference on Artificial Intelligence and Big Data Analytics
   Written in: English
   Authorship: Second Author
   DOI – Link: 10.1109/ICAIBDA53487.2021.9689771 – [LINK]

7. Title: Perbandingan Algoritma Naïve Bayes, K-NN, dan SVM dalam Pengklasifikasian Sentimen Media Sosial
   Translated Title: Comparison of Naïve Bayes, K-NN, and SVM Algorithms in Classifying Social Media Sentiments
   Published in: National Statistics Proceedings of Universitas Padjadjaran
   Written in: Bahasa Indonesia
   Authorship: First Author
   DOI – Link: 10.1234/pns.v10i.85 – [LINK]

8. Title: Pemetaan Kabupaten/Kota di Jawa Barat Berdasarkan Jenis Usaha Pertanian Menggunakan Analisis Korespondensi
   Translated Title: District/City Mapping in West Java Based on Type of Agricultural Business Using Correspondence Analysis
   Published in: National Statistics Proceedings of Universitas Padjadjaran
   Written in: Bahasa Indonesia
   Authorship: First Author
   DOI – Link: 10.1234/pns.v10i.73 – [LINK]

9. Title: Aplikasi ARCH/GARCH dalam Prediksi Harga Saham PT Kimia Farma (Persero) Tbk
   Translated Title: ARCH/GARCH Application in PT Kimia Farma (Persero) Tbk Stock Price Prediction
   Published in: National Statistics Proceedings of Universitas Padjadjaran
   Written in: Bahasa Indonesia
   Authorship: First Author
   DOI – Link: 10.1234/pns.v10i.72 – [LINK]

10. Title: Analisis Klaster Hirarki untuk Mengelompokan Provinsi di Indonesia berdasarkan Indikator Kesejahteraan Rakyat
    Translated Title: Hierarchical Cluster Analysis for Grouping Provinces in Indonesia based on People's Welfare Indicators
    Published in: National Statistics Proceedings of Universitas Padjadjaran
    Written in: Bahasa Indonesia
    Authorship: Second Author
    DOI – Link: 10.1234/pns.v10i.84 – [LINK]

11. Title: Penerapan Analisis Korespondensi Untuk Memetakan Provinsi-Provinsi di Indonesia Berdasarkan Jumlah Tenaga Kesehatan
    Translated Title: Application of Correspondence Analysis to Mapping Provinces in Indonesia Based on Number of Health Personnel
    Published in: National Statistics Proceedings of Universitas Padjadjaran
    Written in: Bahasa Indonesia
    Authorship: Second Author
    DOI – Link: 10.1234/pns.v10i.74 – [LINK]

Dataset Publication

- **Published**

1. Title: User Feedback Dataset from the Top 15 Downloaded Mobile Applications
   Published in: Zenodo
   Authorship: Firsh Author
   DOI – Link: 10.5281/zenodo.10204231 – [LINK]

Connference Participation

1. **Basic Science International Conference 2022**
   I Presented research titled "UNet vs. LinkNet for Segmentation: Which One is Better for Visualizing the 3D Lung Construction of COVID-19?" at the conference and was honored as the best presenter.

2. **3rd International Conference on Applied Statistics (ICAS III) - 2023**
   My team and I presented our research titled “Ensemble UNet with Variant Encoders for Liver Segmentation”.

3. **International Conference on Artificial Intelligence and Big Data Analytics (ICAIBDA) 2021**
   My team and I presented our research titled "A Comparison of SVM and Naïve Bayes Classifier in Binary Sentiment Reviews for PeduliLindungi Application".

4. **Universitas Padjadjaran Statistics National Conference 2021**
   My team and I presented five research papers on different topics in the field of data modeling, including time series data modeling, supervised NLP modeling, and multivariate data modeling. All of the research papers we presented were successfully published in the National Statistics Proceedings of Universitas Padjadjaran.

OTHERS

Certification

- TensorFlow Developer Certification by Google Tensorflow
- IELTS Academic - C1 (advanced/proficient user)

Project

- **PDFs to Bot: Empowering Chatbots with Custom PDFs Knowledge Using LLM** – personal project
  PDFs to Bot is a chatbot question answering application designed to empower users with customized knowledge extracted from uploaded PDF documents. Leveraging the capabilities of free embedding and the LLM from Hugging Face, specifically the instructor text embeddings and the FLAN-T5 LLM model. The user-friendly interface is built using Streamlit, ensuring a seamless and intuitive experience. Powered by the Langchain framework, PDFs to Bot delivers tailored responses and enhances document accessibility, making it a versatile tool for various knowledge-driven applications.

- **All About Einstein: An LLM-Powered Exploration of Albert Einstein** – personal project
  All About Einstein is a question-answering application focused on Albert Einstein. Utilizing the knowledge base extracted from the Britannica Albert Einstein encyclopedia, this project employs and the FLAN-T5 LLM model from Hugging Face. The user-friendly interface, designed using Streamlit, and the application’s pipeline is constructed using the Langchain framework, enabling users to pose a wide range of questions related to Albert Einstein’s life and work.

- **SkinGortihm: Know What You Need** – mobile application project (as a machine learning engineer)
  SkinGorithm is an application that helps users in their skincare journey. With this app users can understand more about the skincare function, pros, and cons based on the ingredients, providing a facial skin reviewer that allows user to know their facial condition, alarm feature to remind the users of their skincare daily usage, and the most important thing they can see their progress in their skincare journey! In this project I Collected and labelled (annotated image masks for segmentation), built, and trained a total of 6 image segmentation models that were deployed in the SkinGotihm app to analyze users' face conditions (Acne, Wrinkles, Black Spots, Puffy Eyes).

- **PTdTu Object Detection: Building an Object Detection Model from Scratch** – personal project
  PTdTu Object Detection is a project focused on developing an object detection model entirely from the ground up. This project leverages original data and meticulous annotation efforts to create a custom object detection solution.

Achievement/Competition

- **Tick Tick Bloom: Harmful Algae Bloom Detection Challenge 2023 hosted by NASA at DrivenData**
  Ranked 33 out of 1377 participants

- **Graduated with the highest GPA in the Faculty of Mathematics and Natural Sciences**
  Awarded the honor of the top-performing graduate among my peers, reflecting dedication to academic excellence and commitment to the field of mathematics and natural sciences.

- **Best Presenter at the Basic Science International Conference 2022**
  Presented my research titled "UNet vs. LinkNet for Segmentation: Which One is Better for Visualizing the 3D Lung Construction of COVID-19?" where I compared two convolutional neural network (CNN) architectures for segmenting CT-scan images. I was also honored to be selected as the best presenter at this year's Basic Conference.

- **Data Analysis Competition Informatics Festival (IFEST) 2021**
  Made it to the final round of the national-level data analysis competition with a paper for the preliminary round entitled "A Comparison of SVM and Naïve Bayes Classifier in Binary Sentiment Reviews for PeduliLindungi Application"

- **Data Analytics Competition PRS ITS 2021**
  Managed to become one of the semifinalists in the SE Asia level data analyst competition.

Specialization and Course Certificate
- "Mathematics for Machine Learning Specialization" developed by Imperial College London and Coursera
- "Google IT Automation with Python Specialization" developed by Google and Coursera
- "DeepLearning.AI TensorFlow Developer" specialization developed by DeepLearning.AI and Coursera.
- "TensorFlow: Data and Deployment" specialization developed by DeepLearning.AI and Coursera.
- Have earned >30 course certifications in the field of AI, data, or tech in general from various reputable platforms.
- To see the full list of my certification please check my **website** or click: **Certification List**

Skills (-) and Language (•)

-Python (Proficient)
-Computer Vision (Intermediate)
-Audio & Signal Modeling (Beginner)
-Database Concept (Intermediate)
-R Programming (Intermediate)
-Statistical analysis (Intermediate)
• Bahasa Indonesia (Native speaker)

-AI, Machine Learning (Intermediate)
-NLP (Intermediate)
-Time Series Modeling (Intermediate)
-OOP Concept (Intermediate)
-C (Beginner)
-Git [version control] (proficient)
• English (C1–advanced/proficient user)

-Deep Learning (Intermediate)
-Data Analysis (Intermediate)
-SQL (Intermediate)
-Web Scraping (Intermediate)
-Data Vis, Tableau (Intermediate)
-Web Prog [HTML, CSS] (Beginner)