

# Mohammad Hamid Asnawi, S.Stat

📍 Bandung, Indonesia

✉ hamid03082002@gmail.com

☎ (+62)82120700341

🌐 mhamidasn.github.io

🌐 [linkedin.com/in/mhamidasn](https://www.linkedin.com/in/mhamidasn)

🐙 [github.com/mhamidasn](https://github.com/mhamidasn)

🏠 [google-scholar](https://scholar.google.com/citations?user=...)

🔗 [codewars.com/users/mhamidasn](https://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 the industry.

## 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 innovative 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 by IEEE Access)
    - "Enhancing Lung Infection 3D Projection Segmentation with 2D U-Shaped Deep Learning Variants" (Currently under review by MDPI Big Data and Cognitive Computing)
  - 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)

Jatinangor 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)

## EDUCATION

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### **Bachelor of Statistics (Sarjana Statistika / S.Stat)**

Universitas Padjadjaran (undergraduate/bachelor studies) – Indonesia – GPA: 3.89/4.00 (cumlaude)

### **Machine Learning Path Student**

Bangkit Academy led by Google, Tokopedia, Gojek, & Traveloka (non-formal studies) – Final score: 93.05/100

## PAPER RESEARCH PUBLICATION

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### **Paper Research Project**

Please check my Google Scholar account for full information and manuscripts of each paper: [Scholar Account](#)

- Paper in English
  1. “Lung and Infection CT-Scan-Based Segmentation with 3D UNet Architecture and Its Modification” Published in [MDPI Healthcare](#) as part of a special issue on Artificial Intelligence (AI) and Machine Learning (ML) in Medical Imaging Informatics towards Diagnostic Decision Making.
  2. “A Comparison of SVM and Naïve Bayes Classifier in Binary Sentiment Reviews for PeduliLindungi Application” published in [IEEE Xplore](#) as part of the 2021 International Conference on Artificial Intelligence and Big Data Analytics.
- Paper in Bahasa Indonesia (The title of the paper has been translated into English, and all of them have been published in the National Statistics Proceedings of Universitas Padjadjaran)
  1. “Comparison of Naïve Bayes, K-NN, and SVM Algorithms in Classifying Social Media Sentiments”
  2. “Hierarchical Cluster Analysis for Grouping Provinces in Indonesia based on People's Welfare Indicators”
  3. “District/City Mapping in West Java Based on Type of Agricultural Business Using Correspondence Analysis”
  4. “Application of Correspondence Analysis to Mapping Provinces in Indonesia Based on Number of Health Personnel”
  5. “ARCH/GARCH Application in PT Kimia Farma (Persero) Tbk Stock Price Prediction”

## CONFERENCE PARTICIPATION

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### **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?" at the conference and was honored as the best presenter.

### **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".

### **Universitas Padjadjaran Statistics National Conference 2021**

My team and I presented our 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.

## OTHER RELEVANT EXPERIENCE

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### **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
- **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](#)

#### **Organization Experience:**

- Head of STATIS – Statistics Badminton (January 2022 – December 2022)
- Deputy Head of Badan Perwakilan Anggota (Legislative Organisation) of Statistics Student at UNPAD (January 2021 – December 2021)
- Deputy Head of STATIS – Statistics Badminton (January 2021 – December 2021)

#### **Skills (-) and Language (•)**

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|--------------------------------------|---|----------------------------------|
| -Python (Proficient)                 | -AI, Machine Learning (Intermediate)    | -Data Analysis (Intermediate)    |
| -SQL (Intermediate)                  | -OOP Concept (Intermediate)             | -Database Concept (Intermediate) |
| -Web Scraping (Intermediate)         | -Data Vis, Tableau (Intermediate)       | -R Programming (Intermediate)    |
| -Statistical analysis (Intermediate) | -C (Beginner)                           | -Web Prog [HTML, CSS] (Beginner) |
| • Bahasa Indonesia (Native speaker)  | • English (C1–advanced/proficient user) |                                  |