

# Ilma Aliya Fiddien

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## EDUCATION

### The University of Edinburgh

*Master of Science in Speech and Language Processing*

Edinburgh, Scotland

Sep. 2022 – Aug. 2023

- Thesis: Investigating Clear-Writing Principles for Scientific Communication: Automated with ClearMetrics (Supervised by Adam Lopez, Ph.D.)
- Relevant courses: Natural language processing & understanding, automatic speech recognition, speech synthesis, AI ethics, statistics and qualitative measurements

### Institut Teknologi Bandung

*Bachelor of Science in Mathematics*

Bandung, Indonesia

Aug. 2017 – July 2021

- Thesis: Partition Dimension of 2-Strong Product Graphs and Resolving Partition Finder Program for Some Classes of Graph (Supervised by Prof. Dr. M. Salman A. N.)
- Relevant courses: Deep learning, data analysis, Google Bangkit 2021 Machine Learning Path

## INDUSTRIAL EXPERIENCE

### Generative AI Engineer

*AssistX Enterprise*

Oct. 2024 – Present

Jakarta, Indonesia

- Designed and conducted systematic benchmarking of LLMs, embedding models, and agentic pipelines for various downstream tasks.
- Fine-tuned embedding models for domain-specific Indonesian content for cross-lingual retrieval tasks.
- Implemented Vision Language Models for OCR and multimodal document processing.
- Implemented specialized projects including information extraction, document translation, and multilingual knowledge base management in the domain of human resources and accounting.
- Led AI safety testing for enterprise deployments.

### Machine Learning Engineer

*AJARI Technologies*

Oct. 2023 – Oct. 2024

Jakarta, Indonesia

- Researched and implemented various classical and state-of-the-art ML/NLP models and techniques for education-domain use cases.
- Developed and monitored the performance of AI services for multiple projects and continuously improved the system. Reduced learning materials processing time up to 5x faster.
- Researched and implemented multi-agent LLMs architecture. Improved chat response time by 3x faster.
- Involved in streamlining team management workflow (Agile & Scrum methodologies) in a fast-growing developer team.

## AWARDS

**Edinburgh Award, Students as Change Agents (2023)**

**ISIC 2023 PPI UK, Best Essay in Social and Health Reconstruction Category (2023)**

**The Indonesia Endowment Fund for Education (LPDP) Scholarship, Indonesian Government (2022-2023)**

**Salman Activist Scholarship (BAS), Rumah Amal Salman (2019-2020)**

## PUBLICATIONS

### Books

**Menyikapi Era Kecerdasan Artifisial: Etika, Keadilan, dan Tata Kelola** | *Co-author*

In progress

- Co-authored with Dr. Aditya Firman Ihsan and Thomhert Suprapto Siadari, PhD (Telkom University)
- Indonesian-language AI ethics book for general readers and institutional decision-makers addressing ethical frameworks, algorithmic justice, and AI literacy

## CONFERENCE AND WORKSHOP PRESENTATIONS

**Towards Contestable AI: Embedding Accountability in Indonesia's National AI Strategy**

Nov. 2024

- Workshop: "From Stem to Stern: Contestability Along AI Value Chains" at The 27th ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (CSCW), San José, Costa Rica
- Paper | Slides

## INVITED TALKS

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Introduction to Philosophy of AI at CIFOR-ICRAF Indonesia

July 2025

AI for Agriculture Paper Sharing at Indonesia AI community

Feb. 2022

## PROJECTS

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### **AI Debate for Defeasible Reasoning** | *Next.js, Vercel, Multi-LLM*

2025

- Investigated AI debate as safety mechanism using BoardgameQA dataset, revealing that moderate-capability judges could effectively evaluate sophisticated debates, sometimes better than higher-capability LLMs.

### **Image Captioning with ResNet50 and LSTM** | *PyTorch, GPU*

2021

- Built CNN-RNN encoder-decoder architecture on MS COCO dataset.

## TEACHING

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### **Guest Lecturer/Mentor**

2023 – 2024

*Indonesia AI (PT. Teknologi Artifisial Indonesia)*

Remote

- Delivered workshops on Mathematics in Deep Learning (Forward and Backward Pass) and Ethical AI
- Engaged AI/ML community through technical and ethical discussions

### **Data Science Instructor (Associate)**

July 2021 – Jan. 2022

*Bitlabs Academy*

Remote

- Created comprehensive learning materials including presentations, Jupyter Notebooks, and practical exercises
- Led interactive machine learning bootcamp sessions covering advanced algorithms like support vector machines and gradient descent

### **Assistant of Mathematics Simulation and Computation Laboratory**

Sep. 2019 – Dec. 2019

*Institut Teknologi Bandung, Dept. of Mathematics*

Bandung, Indonesia

- Taught 50+ students MATLAB for mathematical modeling and simulation
- Provided instruction, assisted with lab practices, and graded assignments

## SHORT COURSES & TRAINING

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### **AI Alignment Fundamentals**

Oct. 2024 – Feb. 2025

*BlueDot Impact*

Remote

- Modules: Reinforcement learning from human (or AI) feedback, scalable oversight, AI safety mechanisms (adversarial robustness, unlearning and control), mechanistic interpretability, technical governance

### **MLx Representation Learning & Generative AI**

July 2024

*Oxford Machine Learning Summer School 2024/AI for Global Goals*

Oxford/Remote

- Modules: Large language models and agents, deep learning techniques, neural and behavioural comparisons between humans and machines, uncertainty quantification, deep learning in financial markets, representation learning and generative AI in vision

## TECHNICAL SKILLS

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**Languages:** Python, SQL (PostgreSQL), MATLAB, R, JavaScript, HTML/CSS

**Frameworks:** Django, FastAPI, Flask, React, Next.js, PyTorch, TensorFlow

**Developer Tools:** Git, Docker, Redis, Celery, PostgreSQL, VS Code, Jupyter Notebook

**Libraries:** LangChain, Transformers, NLTK, spaCy, pandas, NumPy, Matplotlib, NetworkX, BeautifulSoup

**AI/ML:** Large Language Models, RAG pipelines, NLP, Speech Processing, Model Fine-tuning, Prompt Engineering

**Languages:** Indonesian and Sundanese (native), English (C1)