

# Iga Narendra Pramawijaya

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## SUMMARY

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Quarter time reader, part time coder, full time learner. That is how Iga describe himself. Iga is a Master's student and researcher based in Gumi, North Gyeongsang, South Korea and specialising in Digital Signal Processing. Passionate about science with 12 years experience in computer programming, interpersonal skills for working in a team and successfully completing several projects. Now, he is actively creating computational platform for cardiac research, building the first AI aware Indonesian online media, PukulEnam.id, PukulEnam AI research agency, and designing the first Indonesian no-code Computer Networking platform, diconfigin.com Outside of research, computer programming and artificial intelligence, he fills his spare time with making music and reading books.

## WORK EXPERIENCE

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### **Researcher and Software Developer - KIT CML Laboratory** Mar 2023 - present

- Developing CUDA based heart muscle electrophysiology simulation.
- Collaborating with other researchers to measure drug effect, toxicity effect, etc. on heart muscle.
- Further responsibilities including managing code for other researches using git and developing new algorithm and simulation model to effectively cut down simulation time up to 36x.

### **Artificial Intelligence and Audio Engineer - Widya Wicara** Dec 2022 - Jul 2023

- Designed and implemented speech audio processing and audio engineering pipeline using Python and Torch resulting in faster processing times and improved audio quality. Cuts 50 percent of development time.
- Developed and optimised text-to-speech algorithm using state-of-the-art deep learning techniques, resulting in a 4 percent error rate and improved naturalness of Bahasa Indonesia speech audio.
- Reduced speech based AI development costs by up to 80 percent by implementing scalable and efficient model training using minimal amount of data.
- Mentored and lead AI research team of intern engineers, resulting a 50 percent time reduced in onboarding process.

### **Volunteer Multi-Program Machine Learning and Data Mentor - Dicoding** Jan 2022 - present

- Tutored and provided consultative support, allowing for study collectively and mutual support for several Dicoding program such as SIB Kampus Merdeka X Decoding Batch 3, FGA DTS in Google Data Analytics, and Bangkit Academy led by Google, Tokopedia, Gojek, and Traveloka.
- Created a supportive learning environment, leading to high graduation rate among students, minimum of 85 percent.
- Delivered outstanding performance proven by direct invite as the best machine learning facilitator for Bangkit Academy led by Google, Tokopedia, Gojek, and Traveloka.

### **Research Manager and Engineer - PukulEnam** Nov 2021 - present

- Building an AI system including (but not limited to) Indonesian news summariser, market sentiment prediction, news quality checker, and foreign news paraphraser for the news division.
- Connecting appropriate engineering talent with suitable clients.
- Further responsibilities include, running a conceptualised AI system and pipeline for news and engineering division.

## **AI Research Assistant - i-Smile Laboratory**

Oct 2020 - Sep 2022

- Conducted research for Telkom University such as landslide detection by a time-series anomaly detection system using Time Domain Refractometry (TDR). and competed at various data science competitions.
- Held International collaborative research events with various universities, such as Deakin University and Yuan- Ze University. Researched implementation, computer vision (CV) and deep learning case-study, regarding a low computing cost model to detect steel defects using EfficientDet and other state-of-the-art object detection models.
- Shared data science knowledge, machine learning, and artificial intelligence research in the scope of electrical and computer engineering.

## **AI and Data Engineer - Kuwala**

Nov 2021 - Apr 2022

- Created a suitable mix marketing model, using Meta's Robyn platform, and generated weekly reports. Used PostgreSQL, R, Rstudio for visualisation and analysis, and Python.
- Fixed and added features for 3 of Kuwala's basic pipelines. Processing data from Open Street Map and population density pipelines, during probation using pyspark and postgresQL. Also addressed Windows-related coding issues.

## **Computer Vision Research Intern - LIVE Indonesia**

Jul 2021 - Aug 2021

- Conducted research and development in various deep learning algorithms to identify Indonesian retail products.

## **Fullstack Developer and Practicum Assistant - Telkom University**

Aug 2019 - Jul 2021

- Mentored freshmen student to algorithm and programming in C/C++. Awarded as the best tutor for telecommunication engineering in 2021.
- Pioneered paperless online practicum using web platform. (<https://www.daskomlab.com>) as full-stack developer using Laravel, Vue.js, socket.io, and tailwind CSS.
- Guaranteed laboratory's website availability and operability.
- Maintained laboratory's website source code by implementing clean CI/CD

## **PROJECTS**

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### **Violence Audio Detection using Convolutional Neural Network**

[Link to Repository](#)

Part of a six person team developing what we call as 'Zupa App'. We brings public safety especially women and children safety into an application, as a companion app that can deliver safety tips, SOS button, and make enforcer's task easier. As Machine Learning head developer, we made in app CNN model that could detect four types of violence using audio input activated with SOS button with more than 80 percent accuracy.

### **Photos Classification in BANANY, Portable Outdoor NAS**

[Link to Repository](#)

Banany is a portable, machine learning powered backup device for photographer, also powered with wireless network, access point, and NAS capability. Banany uses pretrained model - weighted using MSCOCO - to classify most dominant object in backup photos. This project awarded with gold medal plus special award in Internet of Things from Japan Design Invention Expo 2019, and bronze medal plus special award from Malaysia Technology Expo 2018.

### **Online Class Attendance Automation using RCNN**

Helped a project to detect faces and automate online class attendance. Face detection model was using modified RCNN with two classes (attend and absent), and attendance automated using Python scripts. This project graded A (excellent) after defence.

## Automatic Billing for 'Warteg' dish Using Mask-RCNN

Using Java and Python, me and my 2 colleagues created a system for Indonesian dine-in home dish restaurant ('Warteg') so consumer have more information in lacking of transparency by the cashier. It took an image of our plate containing rice and condiments, then using mask RCNN to identify condiments and sum up the price taken from database.

## Public MATLAB / GNU Octave learning repository

I currently learning MATLAB and GNU Octave to enhance my digital signal processing skill and expand my code experience outside of general purposed languages, like C and Python to more scientific purposed languages like MATLAB. I think that would be good to share my learning journey and get code samples along since it is rare around internet. Usually I update this repository every one or two weeks in the weekend.

## Indonesian Retail Product Intraclass Classification using EfficientDet

EfficientDet is a relatively new object detection network, hence all of its potentiality has not been explored. EfficientDet as an object detection network works well, but what if the network faced with items that similar in shape yet different class? Like a box of stawberry milk and a box of chocolate milk? This challenges smart-retail implementation in daily life. Me and my colleagues tested popular object detection models in several Indonesian products available in store.

## Electrical Bill Prediction using Time Series

In Intelligent System and Machine Learning Laboratory, We create electrical bill prediction system, my role is to deploy the machine learning model as a website and clean the initial data. We also have published this as an academic paper.

## Porn(1) and Customer Feedback(2) Sentiment Analysis using Bidirectional LSTM

I helped my senior's thesis to detect non-porn and porn content in twitter's tweets(1). I helped to fine-tune, and analyze the traning result. I also helped my other senior to prepare the data, create, and evaluate Bidirectional LSTM model to detect IndiHome (Indonesian ISP) customer feedback's sentiment collected in form of twitter's tweets(2). As a result, both of the thesis got excellent result during thesis defence.

## EDUCATION

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2023 - Present	Master of Eng. Candidate - <b>Kumoh Nat'l Institute of Technology</b>	
2021	Machine Learning Graduate - <b>Bangkit Academy (Google)</b>	(Grade: A)
2021	University Innovation Fellow - Stanford School of Design	
2018 - 2022	Bachelor of Engineering - <b>Telkom University</b>	(GPA: 3.81/4.0)
2015 - 2018	High School Diploma - <b>SMAN 3 Denpasar</b>	

## SKILLS

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Skills	Start-up Business Development, AI programming and development, Computer Programming/Open-source software, Quantitative research, Management and talent acquisition oversight, Google Analytics/Web data analytics, Image processing, Team building, Big data analytics, Hardware deployments, IT hardware support, Web development, Concise intrapersonal communication, Music Producing
Technical Proficiency	Python, PHP, SQL, R, Vue.js, Laravel, Socket.io, Linux, Git, Tailwind CSS TensorFlow, (CI/CD), PySpark, PyTorch, LaTeX, Microsoft Azure, Machine Learning

# LICENSES AND CERTIFICATIONS

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<b>Unsupervised Learning, Recommenders, Reinforcement Learning</b> Issued Oct 2023 · No Expiration Date Credential ID S8T7WRUHZ45E	DeepLearning.AI
<b>Supervised Machine Learning: Regression and Classification</b> Issued Sep 2023 · No Expiration Date Credential ID 68RF8PTUXYD4	Coursera
<b>Google Data Analytics Specialization</b> Issued Jun 2022 · No Expiration Date Credential ID Q9KVSFG8HNLW	Coursera
<b>TensorFlow Developer Certificate</b> Issued Aug 2021 · Expires Aug 2024 Credential ID 37812433	Google Developer
<b>Blockchain and Bitcoin Fundamentals</b> Issued Apr 2022 · No Expiration Date Credential ID UC-2b6c0a55-0f4b-4ad0-85d3-b0604f94bfdf	Udemy
<b>TensorFlow: Data and Deployment Specialization</b> Issued May 2021 · No Expiration Date Credential ID LYR9AJN9PMQGC	DeepLearning.AI
<b>TensorFlow Developer Specialization</b> Issued Apr 2021 · No Expiration Date Credential ID 82KDAWDAPCK8	DeepLearning.AI
<b>Mathematics for Machine Learning Specialization</b> Issued Mar 2021 · No Expiration Date Credential ID L2TYBYXAW93T	Imperial College London
<b>Google IT Support Specialization</b> Issued Mar 2021 · No Expiration Date Credential ID HVTUX7JZRDF8	Grow With Google
<b>Google IT Automation with Python Specialization</b> Issued Mar 2021 · No Expiration Date Credential ID XJAA9NS6PXJVC	Grow With Google