# ARYA HANIF

+6285173342248 ◇ Yogyakarta, Indonesia
portfolio.aryahanif.xyz ◇ aryasenaria@gmail.com ◇ linkedin.com/in/arya-hanif/

Engineer with a background in scientific computing and hands-on experience on building end-to-end systems, spanning from iOS and macOS applications to backend services and ML pipelines. Passionate about applying engineering and machine learning to bring a real applicable solution.

## PROJECTS

### Sealens

- **1st place winner** of the **EU-Conexus Innovation Contest 2025**, organized by biomarine technology programs affiliated with **Erasmus** ; furthermore, the app was also presented to **Apple Vice Presidents** and **3 Ministers** during apple academy program.
- Architected and implemented an end-to-end ML system spanning **dataset creation**, **video preprocessing**, **object detection**, **feature extraction**, **clustering**, **classification**, and **re-identification** and **object tracking** accessed through **REST APIs** **microservices**.
- Developed and benchmarked multiple computer vision models (**YOLOv11/v12)**, **ResNet**, **Vision Transformers**, **Siamese networks** and custom CNNs to support rapid experimentation and iteration.
- Built automated **clustering** using **DBSCAN**, **KMeans**, and **PCA** for large-scale visual analysis.
- Designed a modular MLOps framework using **DVC** to version-control **60k+ images**, raw videos, embeddings, and experiment artifacts, enabling reproducible training and evaluation.
- Built a reliable video ingestion pipeline with resumable, chunked uploads (**TUS**), integrity verification, and automated frame extraction using **FFmpeg**.
- Deployed and operated backend services using **Flask** secured via **Cloudflare Tunnel** (production) and **Ngrok** deployed in **Railway**, (development).

### Particle Transportation Simulation

- Developed radiation dose distribution heatmap visualizations to correct misunderstandings in radiotherapy bunker shielding design using **Monte Carlo particle transportation simulation**.
- Established a **Linux**-based simulation server accessed via an **SSH** tunnel, secured through **VPN** access to the university network.
- Evaluate the simulation results by doing comparison using **analytical calculations** and **real** radiation **dose measurement** of radiotherapy bunker in **Hasan Sadikin Public Hospital**.

### Resume Builder

- Implemented custom **LaTeX-to-PDF** resume maker with **ATS-friendly** document output using **React 18** and **TypeScript**, serving users with split-screen real-time editing and PDF preview
- Engineered **Express.js** backend with **RESTful API** proxy for secure LaTeX compilation, including CORS configuration and production deployment on **Vercel**

### Odin Projects

- Created **vanilla html** and **css** projects to deepen understand the fundamental styling layer behind web framework.
- created different projects spanning from Etch a Sketch, Tic Tac Toe, Library, and Admin Dashboard Layout.

## SKILLS

| | |
|---|---|
| **Programming** | Python, Swift, SwiftUI, Git, Shell |
| **DataScience** | PyTorch, OpenCV, NumPy, Pandas, Scikit-Learn, SciPy |
| **Ops** | Linux, Docker, Railway, Flask, vercel, npm, pip ngrok, cloudflare |
| **Web** | ChakraUI, |

## EDUCATION

**Nuclear Engineering** Jul 2024
Universitas Gadjah Mada
Yogyakarta, Indonesia

**iOS Developer** Dec 2025
Apple Developer Academy @Binus Bali
Bali, Indonesia

## EXPERIENCE

**Dr. Hasan Sadikin Public Hospital** Dec 2022 - Feb 2023
*Medical Physics Intern, Bandung, Indonesia*

- Executed supervised patient-specific treatment planning for **linear accelerator** and **teletherapy** for **cancer** patients.
- Performed **Quality Assurance** & **Quality Control** for , **radiotherapy** and **nuclear medicine** departments.

**Electronics and Instrumentation Lab** Jan 2021 - Jun 2021
*Teaching & Lab Assistant, Yogyakarta, Indonesia*

- **Initiated** curriculum update for lab learning modules and pre-/post-test assessments for post covid class.
- Monitored assessments and grading procedures for **100+ students** across department.
- Assisted students with instrumentation tools, sensors, measurement devices, and troubleshooting during practical sessions.