Miftahul Anwar

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PROFESSIONAL EXPERIENCE

Zenius Education, Jakarta   December 2021 – present

An Indonesian EdTech company founded in 2004, providing high-quality online learning solutions for students from primary to high school levels.

Software Engineer   January 2023 – present
- Developed reusable Next.js components, including a multi-instance warning (preventing users from taking tests on different devices simultaneously) and language changer modal. Additionally, implemented Next-i18n to enable app translation between English and Indonesia, using Next.js and Material UI
- Streamlined OpenAI fine-tuned model management with a web-based panel and reporting system, simplifying tutor assets conversion. Employed Next.js, NestJS, Tailwind CSS, Firebase, and OpenAI API.
- Collaborated with team members to gather and refine school subject problem assets from tutors, creating a fine-tuned AI model to assist in problem generation based on those assets. Implemented using Python and the OpenAI API
- Participated in the development of a web-based AI Assistant designed to support tutors in generating school subject problems using a fine-tuned model based on their unique problem assets. Developed with Next.js, NestJS, Tailwind CSS, Firebase, and the OpenAI API

Problem Generator Developer (Clojure Developer)   December 2021 – December 2022
- Created various school subject problems for ZenPractice using tutor-provided templates, generating JSON files for consumption by the Zenius App. This work contributed to 11.894 weekly active users, an average of 1.028.000 questions answered per week by students, and accounted for 32% of the overall platform's active users. Developed using Clojure
- Contributed to the development of a Problem Generator engine to support Problem Generator Developers in creating school subject problems, using Clojure and ClojureScript for implementation
- Collaborated in the development of an application that enabled tutors to more efficiently generate school subject problems without the need for programmer intervention. The app also allows the tutors to produce various graphs and infographics to improve the student learning experience. Implemented using Clojure to generate graphics and infographics in SVG format

Blue Bird Group, Jakarta   August 2021 – November 2021

A leading transportation company in Indonesia, offering taxi services, car rentals, logistics solutions, and app-based ride-hailing.

IoT Engineer Intern
- Collaborated on a project to reverse engineer an embedded device, with the goal of deepening my understanding of its functionality and performance. Utilize Zephyr RTOS for sensory access and perform related tasks
- Developed a neural network model to identify GPS Jammer signals, distinguishing between malicious jamming or common signal loss, using TensorFlow and Python
- Created an Android app to run the GPS Jammer neural network model, sending real-time notifications to differentiate between malicious jamming or common signal, using Kotlin and MQTT

EDUCATION

Politeknik Elektronika Negeri Surabaya, Surabaya   July 2017 – August 2021

B. Eng in Computer Engineering, GPA: 3.57

Thesis: An Indoor Localization using Single Camera for Humanoid Robot EROS

Developed a localization system that enabled the robot to understand its position and orientation on the field, leading to better teamwork and improved attack and defense strategies. Implemented using the Particle Filter algorithm, assisted by landmark detection through MobileNet v2.

ACADEMIC RESEARCH EXPERIENCE

Politeknik Elektronika Negeri Surabaya, Surabaya   February 2018 – November 2020

Robotic Researcher at EEPIS Robot Soccer Team (EROS)

- Developed a Graphical User Interface (GUI) to wirelessly monitor and analyze humanoid robot soccer player behavior, leading to improved gameplay, better analysis, and optimization of performance. Utilized the Qt framework and C++ for development
- Collaborated with a team to refine the decision-making algorithm for humanoid robot soccer players, resulting in enhancements to ball-finding algorithms, ball approaches, path planning, and individual attacking strategies, increasing performance and efficiency during gameplay
- Worked collaboratively to upgrade the robot teamwork algorithm, leading to improved role allocation and teamwork performance for humanoid robot soccer players
- Designed a robot localization system, contributing to better teamwork and individual performance of humanoid robot soccer players through more accurate ball tracking, efficient attacking and defending strategies, and precise positioning. Implemented using the Particle Filter algorithm
- Developed an image processing algorithm, enabling accurate identification of goalpost, landmarks, and the ball, and enhancing the efficiency and effectiveness of the robot localization system for humanoid robot soccer players. Utilized MobileNetV2 for the solution

HONORS and AWARDS

1st place in National Indonesian Robot Contest (KRI), Humanoid Soccer, Ball Dribbling Category	2020
4th place in National Indonesian Robot Contest (KRI), Humanoid Soccer, Sprint Category	2020
4th place in Regional Indonesian Robot Contest (KRI), Humanoid Soccer, Ball Dribbling Category	2020
3rd place in Regional Indonesian Robot Contest (KRI), Humanoid Soccer, Sprint Category	2020
Adaro Scholarship Awardee	2020
Round of 16 in Robocup Humanoid Kidsize League at Robocup 2019 Sydney	2019
2nd place in National Indonesian Robot Contest (KRI), Humanoid Soccer League	2019
Best Strategy in National Indonesian Robot Contest (KRI), Humanoid Soccer League	2019
Peningkatan Prestasi Akademik (PPA) Scholarship awardee	2019
1st place in National Indonesian Robot Contest (KRI), Humanoid Soccer League	2018
1st place in Regional Indonesian Robot Contest (KRI), Humanoid Soccer League	2018
Peningkatan Prestasi Akademik (PPA) Scholarship Awardee	2018
Best Design in National Indonesian Robot Contest (KRI), Humanoid Soccer League	2018

PROJECTS

Postingan Media Gen Z ([repository](#), [demo](#))   March 2023

A fun, open-source project aimed at creating social media news thumbnails in the style of Folkative (an online media platform focused on news, arts, culture, and local brands), offering customizable design elements
- Developing a dark mode canvas and a color picker to enhance user experience and provide customization
- Utilized Next.js, TypeScript, and Tailwind CSS for the development

NMEA Monitor ([demo](#))   April 2021

An app capable of processing various navigation data transmitted through the TCP protocol and NMEA communication standard, offering multiple data handling features
- Developed a Graphical User Interface to display real-time data, including screen recording, playback, and video file management (upload and download) for improved user experience and analysis
- Developed using C++ and enhanced by Qt Framework, FFmpeg, and OpenCV

Portable External Examination Device (PEED) ([demo](#))   March 2021

A project focused on enhancing health monitoring through an IoT device, designed to facilitate remote consultations and empower patients to monitor their health at home, allowing healthcare professionals to quickly access vital patient information and make informed decisions
- Collaborated with the team to develop the IoT device that is capable to assess human health conditions (ear, lungs, heart, mouth, skin, and body temperature), incorporating sensory access for accurate data collection and transmission to a web server, using C++ and Python
- Developed a user-friendly Graphical User Interface for seamless user interaction and effective device communication, enabling accurate data analysis and display, using Qt framework in C++

Archery Pose Estimator ([demo](#))   December 2020

A project aimed at boosting archers' performance with a self-training software for analyzing poses, enabling users to save and compare ideal poses with live ones, enabling data-driven adjustments and progress tracking
- Developed a user-friendly Graphical User Interface for seamless user interaction and effective visualization of pose analysis
- Implemented skeleton detection and joint measurement algorithms to accurately assess archers' poses and identify areas for improvement
- Enabled users to bookmark their ideal pose and compare it to their live pose, empowering them to make data-driven adjustments and track their progress over time

Descotin (Deteksi Suhu for Covid-19) ([demo](#))   August 2020

A project designed to detect if a person is wearing a mask, measure human temperature, and send the report to a website for efficient health monitoring in public spaces or workplaces during pandemics
- Developed the Graphical User Interface for seamless user interaction and effective device communication, ensuring a smooth operation, utilizing Qt Framework in C++
- Implemented the mask detection algorithm to accurately identify whether a person is wearing a mask or not, using OpenCV in C++

TECHNICAL SKILLS

JavaScript, Next.js, NestJS, React JS, Material UI, Tailwind CSS, Golang, Clojure, ClojureScript, Python, C, C++, OpenCV, and Internet of Things (IoT)