Valentinus Mahendra Aaron Quendangen

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https://ronaaron61.github.io/about/

Individuals who are motivated to work hard in carrying out work activities to achieve success and gain experience. Like learning new things to gain more experience, especially by doing or helping a project or research.

Education

SMAK Santo Yoseph Denpasar 2016 - 2019
Science Major

Universitas Airlangga 2019 - 2023
Biomedical Engineering – Medical Instrumentation Major
GPA/IPK: 3.68
Some of what I Learned: Programming and biomedical computing (C++, Python, Matlab), digital and analog electronics, control systems, intelligent systems, signal processing, biomaterials, Embedded Systems, anatomy and physiology

Experience

Mentor on Coding Workshop for Biomedical Engineering Surabaya
Himpunan Mahasiswa Teknik Biomedis (HMTB) UNAIR March 2021 - June 2021

- Teach the basic use of syntax, function and how to make simple programs using C++ and Python for the Biomedical Engineering students class of 2021.
- Check and evaluate the results of the program creation task.
  - C++, Python, Teaching, Speaking

Merdeka Belajar Kampus Merdeka (MBKM) Matching Fund Surabaya
PT Integrasi Bisnis Eksekutif (IBE Reality) September 2022 - January 2023

- Assisting with the manufacturing of X-Mano, the Wearable Exoskeleton Hand Robot for Movement Therapy of Post-Stroke Patients, through the 4-month internship. Including the 3D design for the case, microcontroller, assembly, and Android application.
- Assist the clinical trial to gain feedback from 20+ post-stroke patients in Universitas Airlangga Hospital.
  - 3D Printing, AutoDesk Inventor, Microcontroller, Clinical trial, Entrepreneurship

Research Engineer Assistant Surabaya
Neonatal Research Group FK Universitas Airlangga August 2023 - Present

- Develop the research of Smart Phototherapy System Airlangga Bilirubin Nesting (AirBiliNest), which is a smart phototherapy device for jaundiced babies that can be monitored and controlled using android application. Assembling, testing, and multiplying the prototype required.
- Gather data, including the temperature, humidity, irradiance intensity, and safety in Airlangga University Hospital, and process the data for paper and future development.
- Implementing the MBKM Matching Fund events related to this device with the students, faculty, and industry partners in West Java.
  - Troubleshooting, Microcontroller, Laser Cutting, Soldering, Communication, Testing, Demonstrating

Engineer Surabaya
PT Medika Karya Airlangga December 2023 - Present

- Research and development of a smart phototherapy system for jaundiced babies - Smart Phototherapy System Airlangga Bilirubin Nesting (AirBiliNest) Model 2 and 3.

- Charge in managing technical issues, including the prototyping, PCB, wiring design and assembly of the controller, lamp design, sensor development, microcontroller programming, technical drawings, Android application development, and web development.
- Gather data, including the temperature, humidity, Heart rate and SpO2 sensor, irradiance intensity, and safety in Airlangga University Hospital, and process the data for paper and future development.
    - Troubleshooting, basic electronics, soldering, Microcontroller, PCB design, Graphic Design, Laser Cutting, Soldering, Communication, Testing, Demonstrating, RnD, Android Studio, 3D Printing Design, front-end Web Design, back-end web design, Autodesk Inventor

ENT Product Specialist Surabaya

PT Edison Duta Sarana July 2024 – October 2024

- Manage the supply and stock of ENT medical devices and instruments.
- Communicating between principals, purchasing, marketing, and doctors about the product needed, including instruments, the ENT Unit, and the endoscopy camera.
- Training new users on using the product, assisting in the use of the medical equipment during surgery, and troubleshooting product problems.
    - Speaking (Indonesian and English), Communication, ENT basic, Management, Problem Solving

Technical Expertise

Programming (Python/MicroPython, C++/Arduino, Matlab, HTML) | Arduino, ESP, Analog Discovery | Basic electronics, Electrical circuits, analog and digital electronics, Soldering, PCB design, 3D Printing, Laser cutting, Graphic design, Autodesk Inventor

Achievements

- Best team work at Sebelas Maret International IoT Challange 2021
- Silver award for iMIT SIC 2021 (4th International Malaysia-Indonesia-Thailand Symposium on Innovation and Creativity 2021) held by UiTM Cawangan Malaysia,
  “3d (Three-Dimensional) Lung Cancer Detection and Identification Based On Mixed Reality”

Organizations

- FORMAT (Faculty Press Organization) | Design and Layout Staff 2019 - 2020
- BKK (Faculty Catholic Organization) | MEDINFO Staff (Media and Information) 2019 - 2020
- BKK (Faculty Catholic Organization) | Head of Human Resources Development 2020 - 2021

Research and Publications

- Edukasi Siswa Sma Negeri 1 Kampak Kabupaten Trenggalek Provinsi Jawa Timur Melalui Pelatihan Rancang Bangun Alat Deteksi Kelelahan Berbasis Audiovisual Dalam Peningkatan Mutu Kerja Dan Kesehatan. (Vol. 4 No. 2: Jurnal Pepadu, DOI:10.29303/pepadu.v4i2.2370) 2023
- Design Of Mulifrequency Electrical Impedance Tomography (Mfeit) Based On Analog Discovery To Detect Breast Cancer. (Vol. 87 No. 1: Jurnal Teknologi, DOI:10.11113/jurnalteknologi.v87.21921) 2024
- Evaluation of New Portable Phototherapy Device for Neonatal Hyperbilirubinemia (International Research Journal of Multidisciplinary Scope (IRJMS), DOI:10.47857/irjms.2025.v06i02.03766) 2025

Mini Projects

Projects: https://ronaaron61.github.io/project/

- Electrical Impedance Tomography using ESP Microcontroller to detect anomalies in a phantom that looks like a human body
- Bioimpedance measure using a Microcontroller, and can be used to detect hand angle estimation to control the mechanical arm
- Simple EMG and ECG module for a microcontroller using AD620
- Virtual mouse and keyboard that can be controlled by finger position in the webcam using Python and the mediapipe library
- A smart trash bin that can be opened by gently kicking the bin or placing a hand near the sensor. Can be connected to the Blynk app to monitor the trash volume