NAUFAL ZAIDAN NABHAN

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RESEARCH INTERESTS

Wireless Communication System, Radio Frequency & Microwave Devices, Radar Sensing & Navigation Systems

EDUCATION

Bandung Institute of Technology (ITB) *Bandung, Indonesia*
Master of Science (**5-year Integrated Bachelor's and Master's Program**) *Jul '23 - Aug '24*
Master's Thesis Title : *Design and Implementation of Transceiver System for Underwater Quantum Key Distribution (QKD) Using LED and LoRa*
Electrical Engineering; Full-ride scholarship from SAGATA ITB; CGPA: 3.74/4.0

Bandung Institute of Technology (ITB) *Bandung, Indonesia*
Bachelor of Science *Aug '19 - Jul '23*
Bachelor's Thesis Title : *Design and Implementation of Underwater Wireless Optical Communication System*
Telecommunication Engineering

SELECTED PUBLICATIONS

Data Communication and Dashboard for Wearable EEG Monitoring Device *2025*
Wervyan Shalannanda, Fahmi Fahmi, Faishal Zharfan, Naufal Zaidan Nabhan, Ibni Inggrianti, Erwin Sutanto, Muhammad Yazid
Journal of Universal Computer Science (JUCS) - **Under Review**

LoRa Based Underwater Wireless Network System *2024*
Naufal Zaidan Nabhan, Joko Suryana
2024 10th International Conference on Wireless and Telematics (ICWT '24)

Optimum design of 60WAlGaN/GaN Broadband RF Amplifier for S-Band Operation *2022*
Naufal Zaidan Nabhan, Basuki Rachmatul Alam
2022 International Symposium on Electronics and Smart Devices (ISESD '22)

RESEARCH EXPERIENCES

Radio and Microwave Lab, Telecommunication Engineering Department *Oct '23 - Aug '24*
Research Assistant

- Participated in a national multi-institutional consortium project for Ground Controlled Interceptor (GCI) Radar under the supervision of **Dr. Joko Suryana of Bandung Institute of Technology (ITB)**
- Gained hands-on experience in Digital Signal Processing (DSP) techniques for transmitting and processing **Linear Frequency Modulated (LFM)** and **Frequency Modulated Continuous Wave (FMCW)** radar signals, including signal generation and receiver processing
- Designed and developed **LFM** and **FMCW** radar system prototype simulated by **MATLAB** and implemented by **USRP** for short and long moving range

Teaching Factory Manufacturing of Electronics (TFME) Lab *Jun '22 - Aug '22*
Research Assistant

- Collaborated with **Dr. Ir. Basuki Rachmatul Alam of Bandung Institute of Technology (ITB)** to work on a research funded by the Indonesian Ministry of Education
- Designed and developed an optimal 60 W RF Power Amplifier for S-band operation, implementing a **chip-based GaN HEMT transistor** wirebonded onto a patch-based circuit on a Rogers Duroid substrate simulated by ADS
- Succesfully achieved **56%** RF Power Amplifier efficiency

Telematics Lab, Telecommunication Engineering Department *Mar '23 - Aug '24*
Research Assistant

- Collaborated under the supervision of **Ir. Wervyan Shalannanda, S.T, M.T of Bandung Institute of Technology (ITB)** to design an E2E early seizure detection system and perform analysis on data transmission
- Designed an early seizure detection system utilizing **EEG electrode cap**, **OpenBCI Cyton Board**, and **Raspberry Pi** and **wrote code** to integrate the board with Raspberry Pi
- Analyzed the **E2E data transmission delay** of the system under 3 network conditions (LAN, 2 Subnets, Cloud)

TEACHING

Teaching Assistant	Electromagnetics I & II
Lab. Assistant Coordinator	Communication Systems I & II, Signal Processing

INDUSTRY EXPERIENCES

RF Engineer, Huawei *Sep '24 - Present*

- Support 5G deployment and ensure radio network quality in Jakarta to reach customer satisfaction
- Develop a **Python-based Root Cause Analysis tools** to audit bad network in several areas which **accelerate radio access network assessment** and **reduce service delivery time**.

TECHNICAL SKILLS

Programming & OS	Python, Linux Kernel, Ubuntu
Internet of Things (IoT)	Raspberry Pi, OpenBCI Cyton, Arduino UNO, ESP8266, ESP32
Electromagnetics Simulation	CST Studio, HFSS
Signal Processing	LabView, MATLAB
Other	MySQL, LaTeX, Tableau

ACTIVITIES

Aquifera *Aug '23 - Aug '24*

Community Service

- Proposed **Waterbox**, an IoT based water measure system utilizing **ESP32** and **MQTT** as communication protocol to be deployed in a remote area
- Held responsibility for **integrating ESP32 and waterflow sensor** to PCB circuit, **ensuring connectivity** of ESP32 and sensors, and **validating the functionality** of the hardware used

Bengkel Radio IMT "Signum" ITB *Mar '22 - Feb '23*

Research Project Group

- Collaborated within a **team of 5 members** to create a Rogers Duroid substrate Bandstop Filter aimed to **attenuate signal** frequencies within the range of 3.2 – 3.7 GHz
- **Conducted simulations** using specialized software and **performed measurements** on the fabricated filter using a Vector Network Analyzer (VNA)

AWARDS

2^{nd} Winner - FORDIGI BUMN Bandung Chapter Hackathon - BUMN Digital Forum (FORDIGI) *2023*

- Participated as a **4 members team** in a competitive Hackaton held by the ministry of state-owned enterprises
- Proposed a product idea named "EZValve" as an **IoT-based system irrigation** to simplify farmers work
- Won **2^{nd} Winner out of 1840 teams**

HONORS

Bachelor's Scholarship Awardee - ITB Electrical Engineering Alumni Association *2024, 2022*

Master's Scholarship Awardee - SAGATA Tuition Scholarship, ITB *2023*

REFERENCES

Joko Suryana
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Bandung Institute of Technology
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Associate Professor
Bandung Institute of Technology
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Wervyan Shalannanda
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