

FAISHAL ZHARFAN

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RESEARCH INTERESTS

Networked Systems, Edge Computing, Multimedia Systems, Computer Networks, Mobile Systems, Wireless Systems

EDUCATION

Bachelor of Science, Bandung Institute of Technology (ITB) Bandung, Indonesia
#1 Science & Engineering school in Indonesia Jul '19 - Jul '24
Telecommunication Engineering; CGPA: 3.73/4.0 (Cum Laude, Rank: Top 10%)

Erasmus+ Student Mobility Program, University of Zagreb Zagreb, Croatia
Faculty of Electrical Engineering and Computing, Full-ride scholarship from the EU Feb '22 - Jul '22

SELECTED PUBLICATIONS

CONCIERGE: Towards Accuracy-Driven Bandwidth Allocation for Video Analytics Applications in Edge Network 2024

Yuyang Huang, Faishal Zharfan, Hendrawan Hendrawan, Haryadi S. Gunawi and Junchen Jiang
2024 IEEE International Conference on Edge Computing & Communications (EDGE '24)

Modelling of Wireless OFDM System with Deep Learning-based Modulation Detection 2022

Rahmat Mulyawan, Faishal Zharfan, Muhamad Rizki Nur Rahman, Infall Syafalni, Nana Sutisna, Trio Adiono
2022 International Symposium on Electronics and Smart Devices (ISESD '22)

Comparison of Caching Replacement Policies in Changing the Number of Interest Packets on Named Data Networks Using Mininet-NDN 2021

Faishal Zharfan, Larastya Devindira Hasnaa, Nana Rachmana Syambas, Ridha Muldina Negara
15th International Conference on Telecommunication Systems, Services, and Applications (TSSA '21)

RESEARCH EXPERIENCES

International Undergraduate Research Collaboration on Video Analytics Oct '22 - Jul '24
Undergraduate Research Assistant

- The research aimed to improve Video Analytics Applications' accuracy by employing an accuracy-driven resource allocator
- Collaborated with **Prof. Junchen Jiang of the University of Chicago** and **Prof. Hendrawan of Bandung Institute of Technology**
- Implemented **Concierge**, an accuracy-sensitivity based resource allocator designed for maximizing object detection systems performance under limited resources
- Successfully **improved the average f1-score** of DDS and AWStream by **7.5% over the state-of-the-art** as well as **optimized** DDS and AWStream **processing performance** by **50%**

Undergraduate Research Collaboration on Mobile EEG Jul '23 - Jun '24
Undergraduate Research Assistant

- The research aimed to design an E2E early seizure detection system and perform analysis on data transmission
- Collaborated with **Wervyan Shalannanda of Bandung Institute of Technology**
- Designed an early seizure detection system frontend utilizing **EEG electrode cap, Open BCI Cyton Board, and Raspberry PI**
- Analyzed the **E2E data transmission delay** of the system under 3 network conditions (LAN, 2 Subnets, Cloud)

Undergraduate Research Collaboration on DL for 5G Communications Apr '22 - Dec '22
Undergraduate Research Assistant

- The research aimed to address the low accuracy trend on FB-based AMC by employing CNN model as the classifier
- Collaborated with **Prof. Trio Adiono** and **Rahmat Mulyawan of Bandung Institute of Technology**
- Designed a smart wireless OFDM system with deep learning-based modulation detection
- Successfully **achieved 91.375%** of accuracy through experiments by utilizing Adalm Pluto

TEACHING

Teaching Assistant	ET4047: Artificial Intelligence & Big Data Analysis for Telecommunication
Teaching Assistant	ET2107: Programming
Lab. Assistant Coordinator	ET2214: Telecommunication Laboratory Works IIB (Computer Networks I)
Lab. Assistant Coordinator	ET2111: Telecommunication Laboratory Works I (Digital System Design)

INDUSTRY EXPERIENCES

Support Engineer, Mobileum *Nov '24 - Present*
Mentor: Heri Yardi

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Technical Engineer Intern, ZTE Indonesia *Jul '24 - Nov '24*
Mentor: Xu Shuai

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COMPUTER SCIENCE SKILLS

Programming Languages	Python, Go, C, C++, MATLAB
Systems	Linux Kernel, Ubuntu, Shellscript, FFmpeg, gRPC
Internet of Things (IoT)	Raspberry Pi, OpenBCI Cyton, Arduino UNO, ESP8266
Cloud Computing	GCP, Chameleon Cloud, AWS, Huawei Cloud
Machine Learning & AI	Tensorflow, Keras, Pytorch
Network Simulation	eNSP, Packet Tracer
Orchestration Systems	Docker, Kubernetes
Database	MySQL, MongoDB
Other	Latex, CST Studio, HFSS

ACTIVITIES

Huawei Seeds for The Future 2022 *Aug '22*
Indonesia Representative

- **Selected along 10 Indonesia delegations out of 200 applicants** to attend Huawei Seeds for The Future 2022
- Participated in Tech4Good competition, proposed **CanTing**, an early stunting detection system
- Explored various Huawei technologies such as **AI, 5G, Cloud Computing**, etc

ACHIEVEMENTS

3rd Winner - Huawei ICT Competition on Computing Track at National Level (2023)

- Successfully tackled OS & DB challenges and demonstrated strong problem-solving skills in Linux
- Won **3rd Winner out of 15 teams from the top 15 universities in Indonesia**

3rd Winner - Huawei ICT Competition on Network Track at Global Level (2023)

- Successfully configured a complex real-world scenario network topology utilizing networking technologies over an intensive 8-hour period
- Won **3rd Winner out of top 50 teams from 32 countries around the world**

2nd Winner - Huawei ICT Competition on Network Track at Regional (Asia-Pacific) Level (2023)

- Successfully configured a real-world scenario network topology utilizing networking technologies (OSPF, VLAN, BGP, WLAN, Firewall, etc.)
- Successfully tackled computer networking challenges that are equivalent to the HCIE certification exams
- Won **2nd Winner out of 12 teams of Asia-Pacific countries representation**

1st Winner - Huawei ICT Competition on Network Track at National Level (2022)

- Participated in a prestigious and highly competitive international ICT Competition

- Successfully tackled computer networking challenges and demonstrated strong problem-solving skills in networking
 - Won **1st Winner out of 30 teams from the top 30 universities in Indonesia**
- 2nd Place** - Most Outstanding Student of Telecommunication Engineering, ITB (2022)
- Selected based on academic and non-academic performance

HONORS

Ganesha Award - Ganesha Karsa, ITB (2023)

Fellowship Awardee - Summer of Reproducibility, UC Santa Cruz (2023)

Scholarship Awardee - Erasmus+ International Credit Mobility (2022)

Scholarship Awardee - Electrical Engineering Alumni Association (2022)

REFERENCES

Junchen Jiang

Assistant Professor

University of Chicago

junchenj@uchicago.edu

Hendrawan

Full Professor

Bandung Institute of Technology

hend@itb.ac.id

Wervyan Shalannanda

Assistant Professor

Bandung Institute of Technology

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