FAISHAL ZHARFAN

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OBJECTIVE

First-year CS PhD student at UMN specializing in Systems and Systems-for-ML. My current research involves resource management in edge devices, specifically designing systems to improve multimedia and ML systems performance in edge networks. Seeking a PhD Intern role to apply this hands-on experience in Summer (May - August) 2026

RESEARCH INTERESTS

{Networked, Distributed, Multimedia} Systems, Edge Computing, Resource Allocation, Video Analytics, Systems-for-ML

EDUCATION

Doctor of Philosophy, University of Minnesota – Twin Cities — Minneapolis, MN
Computer Science; GPA: 3.86/4.0 — *Aug '25 - Present*
Advisor: Dr. Abhishek Chandra

Bachelor of Science, Bandung Institute of Technology (ITB) — Bandung, Indonesia
Telecommunications Engineering; CGPA: 3.73/4.0 (**Cum Laude, Rank: 2/37**) — *Jul '19 - Jul '24*

Erasmus+ Student Mobility Program, University of Zagreb — Zagreb, Croatia
Communications Engineering, 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, 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)

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 implementing **Concierge**, an accuracy-driven resource allocator
- Collaborated with **Prof. Junchen Jiang** and **Prof. Haryadi S. Gunawi of the University of Chicago**
- Enabled **self-adaptability** based on the available bandwidth and optimized their algorithms by **leveraging RAMDisk** for caching, **utilizing OpenCV** for quick decoding, and enabling **batching** on the inference server
- Optimized Concierge's allocation algorithm to **reduce the overhead by 50%**, and **wrote ∼300 lines of shellscript** to automate data measurement
- Successfully **improved the average f1-score** of DDS and AWStream by **7.5% over the state-of-the-art** as well as **cut down** processing latency 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**, **OpenBCI Cyton Board**, and **Raspberry Pi** and **wrote ∼200 lines of code** to automate data measurement
- Analyzed the **E2E data transmission delay** of the system under 3 network conditions (LAN, 2 Subnets, Cloud)

TEACHING

Teaching Assistant	CSCI2021: Machine Architecture & Organization
Teaching Assistant	ET4047: Artificial Intelligence & Big Data Analysis for Telecommunication
Teaching Assistant	ET2107: Programming

INDUSTRY EXPERIENCES

Support Engineer, Mobileum *Nov '24 - Jul '25*

- Monitored, troubleshot, and maintained the performance of **deep network analytics** servers for major international telecommunication clients, including T-Mobile, Telkomsel, and Airtel.
- Performed weekly software updates and patches across the server infrastructure to ensure high availability and system security for critical client operations.

COMPUTER SCIENCE SKILLS

Programming Languages	C, C++, Python, Shellscripts, MATLAB, Qiskit
Systems	Linux Kernel, Ubuntu, FFmpeg, gRPC
Internet of Things (IoT)	Raspberry Pi, OpenBCI Cyton, Arduino UNO, ESP8266
Cloud Computing	AWS, GCP, Chameleon Cloud, Huawei Cloud
Machine Learning & AI	Tensorflow, Keras, Pytorch, OpenCV
Orchestration Systems	Ansible, Docker, Kubernetes
Database	MySQL, MongoDB
Other	H264, LaTeX

ACTIVITIES

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

- Proposed **CanTing**, an early stunting detection system utilizing **Huawei Cloud** and **ML Kit**
- **Selected along 10 Indonesia delegations out of 200 applicants**

AWARDS

3^{rd} Winner - Huawei ICT Competition on Network Track at Global Level *2023*

- Configured a complex real-world scenario network topology **over an intensive 8-hour period**
- Won **3^{rd} Winner out of top 50 teams from 32 countries around the world**

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

- Configured a real-world scenario network topology utilizing Networking Protocols (**Routing**, **Switching**, **WLAN**)
- Tackled computer networking challenges that are equivalent to the **HCIE certification exams**
- Won **2^{nd} Winner out of 12 teams of Asia-Pacific countries representation**

1^{st} Winner - Huawei ICT Competition on Network Track at National Level *2022*

- Participated in a prestigious and highly competitive international ICT Competition
- Tackled computer networking challenges consisting of **Routing**, **Switching**, **WLAN**, and **Security** technologies
- Won **1^{st} Winner out of 30 teams from the top 30 universities in Indonesia**

2^{nd} Place - Most Outstanding Student of Telecommunication Engineering, ITB *2022*

- Selected based on academic and non-academic performance

HONORS

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

Ganesha Award - Ganesha Karsa, ITB *2023*

Fellowship Awardee - Summer of Reproducibility, UC Santa Cruz *2023*

Scholarship Awardee - Erasmus+ International Credit Mobility *2022*

REFERENCES

Abhishek Chandra
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Junchen Jiang
Assistant Professor
University of Chicago
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Haryadi S. Gunawi
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