

Shidqie Taufiqurrahman

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Education

Aug 2016 – Oct 2020

Bandung Institute of Technology – Bandung, Indonesia

Bachelor of Science in Biomedical Engineering from School of Electrical Engineering and Informatics

- **GPA:** 3.48 / 4.00
- **Thesis:** Optimization of Convolutional Neural Network Model MobileNetV2 Performance on Diabetic Retinopathy Severity Classification.
- **Relevant Coursework:** Mathematics, Engineering Mathematics, Programming Fundamentals, Problem Solving with C, Probability and Biostatistics, Biomedical Image Processing, Pattern Recognition.

Work Experiences

Nov 2022 – Present

Machine Learning Engineer, Nomura Research Institute – Jakarta, Indonesia

- Developed customized machine learning solutions, aligning with specific client needs and project requirements.
- Represented the Machine Learning team at the Japan Headquarters for collaborative engagements in pioneering technologies such as Large Language Models and Stable Diffusion.

Selected projects:

- Implemented an MLOps system for dataset management and semi-automated annotation workflow using FiftyOne and CVAT in a self-service gas station monitoring project.
- Contributed to the improvement of an item detection model's performance used in a convenience store robot.

Mar 2021 – Nov 2022

Artificial Intelligence Engineer, Qlue – Jakarta, Indonesia

- Responsible for end-to-end real-time surveillance video analytics solution development (research, implementation, deployment, and optimization).
- Succeeded in developing 2 new products for the company.

Selected projects:

- Researched and developed a real-time video anomaly detection algorithm for detecting unusual behavior from CCTV footage.
- Built a solution to ensure people follow personal protective equipment guidelines in a factory using an attribute recognition model.

Oct 2020 – Feb 2021

Research Assistant, Bandung Institute of Technology – Bandung, Indonesia

- Worked on optimizing a deep learning model for classifying the severity of diabetic retinopathy in retina images, extending the research from the undergraduate thesis.
- Successfully improved the classification performance of MobileNetV2 on two diabetic retinopathy datasets, APTOS 2019 and Messidor, outperforming other publications that used larger model architectures.
- Collaborated with Cicendo Eye Hospital in Bandung for real-data testing as part of the proof-of-concept process.

June 2019 – Aug 2019

Research Assistant Intern, Indonesian Institute of Sciences – Bandung, Indonesia

- Contributed to research at the Electronics and Telecommunications Research Center as part of an industrial internship program.
- Researched the optimal configuration for a multi-path optical ring resonator for sensor application, with the goal of enhancing sensitivity.
- Part of the National Innovation System Research Incentive Program (INSINAS) 2019 from the Ministry of Research, Technology and Higher Education of the Republic of Indonesia.

Publications

November 2020

Taufiqurrahman, S., Handayani, A., Hermanto, B. R., & Mengko, T. L. E. R. (2020, November). Diabetic retinopathy classification using a hybrid and efficient MobileNetV2-SVM model. In *2020 IEEE REGION 10 CONFERENCE (TENCON)* (pp. 235-240). IEEE. <https://doi.org/10.1109/TENCON50793.2020.9293739>

September 2020

Taufiqurrahman, S., Dicky, G., Estu, T. T., Daud, P., Mahmudin, D., & Anshori, I. (2020, September). Free spectral range and quality factor enhancement of multi-path optical ring resonator for sensor application. In *AIP Conference Proceedings* (Vol. 2256, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0014960>

September 2020

Dicky, G., **Taufiqurrahman, S.**, Estu, T. T., Wijayanto, Y. N., Manurung, R. V., Mahmudin, D., Anshori, I., & Daud, P. (2020). Sensitivity Enhancement of Silicon-on-Insulator Multipath Ring Resonator using Gold Nanodisk for Sensor Application. *Makara Journal of Science*, 24(3), 5. <https://doi.org/10.7454/mss.v24i3.1199>

Teaching Experience

Aug 2019 – Dec 2019

Laboratory Assistant of Digital Systems & Microprocessor, Bandung Institute of Technology

Workshops and Seminars

November 2020

Presenter, IEEE Region 10 Conference (TENCON) 2020 in Osaka, Japan

Presented an academic paper “Diabetic retinopathy classification using a hybrid and efficient MobileNetV2-SVM model”.

October 2020

Speaker, Machine Learning Workshop organized by Electrotechnics Student Association, Bandung Institute of Technology (University Level)

Delivered a presentation on machine learning fundamentals and facilitated a hands-on workshop.

October 2019

Presenter, International Symposium on Frontier Applied Physics (ISFAP) in BSD, Indonesia

Presented an academic paper “Free spectral range and quality factor enhancement of multi-path optical ring resonator for sensor application”.

November 2018

Participant, National Symposium on eHealth and Technologies for A Resilient Community Against Disasters in Bandung, Indonesia

A symposium organized by IEEE SIGHT and Bandung Institute of Technology.

Professional Association

Aug 2017 – Oct 2020

Electrotechnics Student Association, Bandung Institute of Technology

A union of electrical engineering, electrical power engineering, and biomedical engineering undergraduate students of Bandung Institute of Technology.

Served as Head of Computer Division from March 2019 to February 2020, a division where students with interests in web and mobile development, as well as other computer science-related activities came together.

Competitions

August 2020

Participant, Shopee Code League

Finished in 176th place from 823 teams (top 22%) in Shopee Code League’s Product Detection Challenge by predicting the category of Shopee product images using a deep learning model.

August 2020

Participant, ASEAN Data Science Explorer

Created a storyboard containing data analysis and visualization, proposed and demonstrated a solution from a data-driven problem-solving approach using SAP Analytic Cloud.

Community Services

May 2020

Participant, Pemuda Tanggap Covid-19 (Youth Responds to Covid-19)

Youth Responds to Covid-19 is a charity program initiated by the International Youth Exchange candidates from East Java, Indonesia, who successfully raised approximately 35 million rupiah in one month. This fund was then used to provide essential food and necessity packages to individuals affected economically by the COVID-19 pandemic.

May 2019

Volunteer, Palapa by Electrotechnics Student Association

Volunteered for Palapa, a community development and social mapping program by the Electrotechnics Student Association. Conducted surveys in rural villages to support the initiative.

*December 2017 &
May 2019*

Participant, Live in Bunikasih by Kelompok Mahasiswa Pecinta Alam (KMPA) in Bandung Institute of Technology

Participated in a community development program in Bunikasih, a rural village in West Java, Indonesia, led by KMPA — an association of students with a shared interest in outdoor sports. Actively contributed by assisting the local residents with their daily tasks and also teaching at the local school.

Additional

Interests: Computer Vision, Deep Learning, Generative AI, MLOps.

Library Proficiency: PyTorch, OpenCV, Scikit-learn, FiftyOne.

Certification & Training: AWS Cloud Practitioner.