Ibrahim Fadhil Djauhari

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Education

Master of Science in Maritime Engineering: Marine Engineering & Autonomy
University of Southampton, September 2023 – September 2024

- Dissertation: Intelligent Path Planning for Visual Subsea Cable Survey using Autonomous Underwater Vehicles
- Relevant Coursework: Advanced Sensors and Condition Monitoring, Maritime Robotics, Intelligent Mobile Robotics

Bachelor of Science in Electrical Engineering
Bandung Institute of Technology, August 2016 – October 2020

- Final Project: Integration of Guidance and Control System using Path Following Method in Hybrid Underwater Glider
- Relevant Coursework: Embedded Systems, Microcontroller Systems, Instrumentation Systems, Robotics, Digital Control Systems
- GPA: 3.54 (146 credits)

Work Experience

Freelance Engineer
Self-employed, January 2025 – present

- Contracted as a part-time specialist to develop subsea cable modelling software in C++ from January to July 2025

Research Assistant in the Ocean Perception Lab
University of Southampton, September 2024 – November 2024

- Developed a visual subsea cable survey system for detecting, following, and searching subsea cables into a Sparus II Autonomous Underwater Vehicle (AUV) using Python and ROS
- Deployed a computer vision model using Docker in an Nvidia Jetson board for cable detection using Voyis Recon LS camera systems
- Developed a cable detection API using Flask to bridge communication between the computer vision model & cable survey system
- Planned and executed the deployment of an AUV in a four-day sea trial off the coast of Plymouth to test the subsea cable survey system

Cloud Middleware Engineer
Samsung Research Institute Indonesia, August 2021 – August 2023

- Developed Function-as-a-Service (FaaS) systems for serverless application deployment in a private cloud service using NodeJS, MongoDB, Apache Openwhisk, and AWS EC2
- Developed Point-of-Interest (POI) Search API with nearby, geocoding, and full-text search features using NodeJS, MongoDB, and Elasticsearch
- Deployed POI Search API serving ~7 million POIs used by Samsung applications in the Europe and Asia Pacific regions using AWS EKS and Kubernetes
- Developed automated CI/CD pipeline with Blue-Green deployment strategy using Github API, AWS SNS, and AWS EC2 to ensure 100% uptime of POI Search API

Research Assistant in the ITB-HUG Research Team
Bandung Institute of Technology, October 2020 – August 2023

- Developed the navigation, guidance, and control systems of the ITB Hybrid Underwater Glider (ITB-HUG) using C++ and ROS
- Deployed the ITB-HUG navigation, guidance, and control systems on an embedded system consisting of UUDOx86 & Beaglebone Black boards for high-level systems and Arduino Nano boards for low-level controllers

IoT Application Engineer
CAD-IT Consultants (Asia) Pte. Ltd., December 2020 – July 2021

- Developed full-stack IoT applications for enterprise manufacturing operations management using NodeJS, Flask, React, PostgreSQL, and PTC Thingworx

Publications

Djauhari, Ibrahim, Bodenmann, Adrian, Simmons, Samuel and Thornton, Blair (2025) Subsea cable search and path estimation using graph SLAM for AUV-based inspection. *Underwater Technology 2025, Taipei, Taiwan.* 6 pp.

Bodenmann, Adrian, Djauhari, Ibrahim, Devgon, Jivan and Thornton, Blair (2024) Real-time subsea communication cable detection for AUV-based inspection. *AUV 2024, Boston, United States. 18 - 20 Sep 2024.* 6 pp. (In Press)

Patents

"Sistem dan Metode Navigasi untuk Menentukan Data Posisi, Orientasi dan Kecepatan Wahana Luncur Bawah Air Otonom Hibrida"

- Indonesia Patent No. IDP000095871
- Date of issue: 10 October 2024

"Alat dan Metode Untuk Menggerakkan Hybrid Autonomous Underwater Glider dan Metode untuk Memandu Gerakannya"

- Indonesia Patent Application No. P00202105587
- Date of application: 22 July 2021 (Pending)

Awards

LPDP Scholarship Awardee – 2023

- Awarded a merit-based fully-funded scholarship for master's studies from the Indonesian government

Leadership Experience

Project Leader
OSKM ITB 2019, April 2019 – September 2019

- Managed 2.481 committee members and over 2 billion IDR of funds to achieve the vision of OSKM ITB 2019 as a student orientation event to welcome and educate 4.465 new ITB students
- Initiated six student initiatives with over 2.000 participants to support the Sustainable Development Goals
- Helped raise over 600 million IDR in funding by negotiating deals with various sponsors
- Initiated OSKM ITB 2019 as the largest zero-waste event in ITB and recycled around 412kg of food waste throughout the event