Joshua Teguh Santoso

Graduate Student in Information Sciences at Tohoku University.
Passionate about Software Engineering, Data Science and Transportation Sciences.

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Technical Skill

Programming languages:
Python, Java, JavaScript, C, HTML/CSS, R, MATLAB, Fortran90

Technologies / Tools:
Gurobi Optimizer, OpenGL, OpenCV, pandas, NumPy, SciPy, NetworkX, matplotlib, LaTeX, Figma

Education

Candidate for Master of Science in Information Sciences
Tohoku University, Sendai, Japan,
April 2022 – March 2024 (Expected)

Bachelor of Engineering in Mechanical and Aerospace Engineering
Tohoku University, Sendai, Japan,
October 2017 – September 2021,
CGPA: 3.09

Language Skills

English: Business Level
- TOEFL iBT: 102/120
  June 2021

Japanese: Business Level
- JLPT N2 Level: Passed (112/180)
  December 2020

Indonesian: Native Speaker

Awards

- Recipient of Sato Yo International Scholarship from Sato Yo International Scholarship Foundation (SISF) – April 2022

Interests

Photography, Travelling, Reading, Chillin'

Research & Projects

Research on the effect of Mobility-as-a-Service (MaaS) platform on transportation network by agent-based simulation
October 2021 – ongoing
- Currently conducting research on the effect of MaaS platform by making an extension in **Java** and running a simulation in Multi-Agent Transport Simulation (MATSim)

Research on the efficient solution method for dynamic traffic assignment problem with route and departure-time choice
October 2020 – July 2021
- Implemented evolutionary dynamics approach to solve the departure time choice part and create an algorithm that connect with the route choice part by using **Python** and **Gurobi Optimizer.**
- Conducted conference proceedings at the 63rd JSCE Conference on Infrastructure Planning (6th June 2021)

Visualisation of Static User Equilibrium assignment problem
December 2020 – January 2021
- Built a solver for static user equilibrium assignment problem in **Python** that can solve a relatively large network (24 nodes/76 links) in less than 12 seconds and used **NetworkX** package for visualisation of the result.

Finding Waldo
October 2019 – December 2019
- Created and trained a Haar Cascade object detection to find Waldo from 'Where's Waldo?' series by using **OpenCV** framework on top of **Python**.

Car Navigation System
December 2018 – January 2019
- Built a GUI-based car navigation system by using **C** language and **OpenGL** framework.

Activities

Individual participant of Behaviour Modelling Summer School 2021
September 2021
- Teamed up with the other individual participants to create behaviour discrete choice model based on GPS data in **R** programming language.
- Contributed by data cleaning and incorporate daily COVID-19 cases into the model. Achieved 5th place for Kasumi Award out of 19 teams.

Publication

Non-Peer-Reviewed Conference Proceedings
- Santoso, J. T., & Nagae, T. (2021 June 6th) Non-Sorting Solutions of Dynamic User Equilibrium with Route and Departure-time Choice in One-to-Many Corridor Network. Presented at the 63rd JSCE Infrastructure Planning and Management Conference.

Skill

Programming languages:
Python, Java, JavaScript, C, HTML/CSS, R, Fortran90

Technologies / Tools:
Git, Gurobi, OpenGL, OpenCV, VSCode, IntelliJ, Jupyter Notebook, SolidWorks, LaTeX

Education

Candidate for Master of Science in Information Sciences
Tohoku University, Sendai, Japan, April 2022 – March 2024 (Expected)

- Currently researching on the effect of Mobility-as-a-Service platform on transportation network by creating an extension in Java and do simulation on Multi-Agent Transport Simulation (MATSim).

Bachelor of Engineering in Mechanical and Aerospace Engineering
Tohoku University, Sendai, Japan, October 2017 – September 2021, CGPA: 3.09

- Conducted research on the evolutionary dynamics approach for analysing dynamic user equilibrium assignment problems with (simultaneous) route and departure-time choice by using Python and Gurobi.

Experience

Manufacturing Engineering Intern
Mitsubishi FUSO Bus and Trucks, Kawasaki, Japan, August 2019 – September 2019

- Analysed heavy-duty truck welding process as a measure before automation by using OTRS10 software and proposed a potential automation proposition which will reduces the welding process time and improve workplace safety.

Projects

Activities

Individual participant of Behaviour Modelling Summer School 2021
September 2021

- Teamed up with the other individual participants to analyse Personal Trip data and create behaviour discrete choice model out of it in R programming language.
- Contributed by data cleaning and incorporate daily COVID-19 cases into the model.
- Achieved 5th place in Kasumi Award out of 19 teams.

Member of Tohoku University Formula Team
April 2018 – September 2019

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Achievements & Award