

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, Linux, OpenCV, pandas, NumPy, SciPy, NetworkX, matplotlib, Git/GitHub

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

June 2020 – September 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 developed in **Linux** (Ubuntu) environment.

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.