

# Chung-Kyun HAN

## Senior Data Scientist

### Personal Info.

#### E-mail

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chungkyun-han.github.io

#### Phone

(+65) 9715 7059

### Tech. Skill

#### Optimization Tech.

Expert

#### Programming

Advanced

#### Data Analysis

Intermediate

### Soft Skill

#### Problem Solving

Very Strong

#### Responsibility

Very Strong

#### Leadership

Strong

### Languages

#### English

Fluent

#### Korean

Native

*Specialisms in efficient algorithm design and empirical data analysis*

### Relevant Project

- **Task recommendation systems for last-mile logistics with crowdsourcing**
  - Mathematical models (implemented in Python with Gurobi API, in C/C++ with CPLEX API)
  - Recommendation algorithms (implemented in Java with CPLEX API, in C/C++ with CPLEX API)
  - [Visualizer](#) (implemented in Python)
- **Data Analysis on log datasets from a taxi company**
  - Analysis on the impact of information boards around Changi Airport
  - Community detection algorithm based on series of regression models
  - [Taxi Trajectory Visualizer](#) (implemented in Python)
- **Decision support system for Personal Rapid Transit**
  - Algorithm for dispatching and routing vehicles (implemented in Python)
  - [Simulator and Visualizer](#) (implemented in Python)
- **Production planning for athletic shoes manufacture**
  - Mathematical model (implemented in Python with CPLEX OPL)

### Skill

- **Optimization Technique; Design & Development**
  - Exact Approach: Branch-and-Cut, Branch-and-Price
  - Efficient Algorithm: Column Generation, Metaheuristics, Lagrangian Relaxation
  - Mathematical Modeling: Vehicle Routing Problem
- **Data Analysis**
  - Data Preprocessing: Geospatial Data, Big Data
  - Web Crawling & Data Visualization
- **Programming**
  - Python (Expert): NumPy, SciPy, Pandas, Matplotlib, PyQt, GeoPy, Selenium, ... etc.
  - C/C++ (Advanced) & Java (Advanced): Algorithm Development and Concurrent Programming
- **Software**
  - Optimization Solver: CPLEX, Gurobi
  - Documentation: Latex, MS office, G Suite
  - System Development: Git, AWS, Linux/Unix

### Certification

- **Amazon Web Services Cloud Practitioner**
  - Expiration date: May 14 2023
  - Credential ID: [4TQR7221GE4QQEWH](#)

## Publication and Talk

- Conference
  - **HAN, Chung-kyun**; and CHENG, Shih-Fen. An Exact Single-Agent Task Selection Algorithm for the Crowdsourced Logistics. *Proceedings of 29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI2020)*. Yokohama, Japan, July 11-17 2020. (To be appeared)
  - **HAN, Chung-kyun**; CHENG, Shih-Fen; and VARAKANTHAM, Pradeep. [A homophily-free community detection framework for trajectories with delayed responses](#). *Proceedings of the 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19)*. Montreal, Canada, May 13-17 2019. (Extended Abstract)
  - **HAN, Chung-Kyun**; MISRA, Archan; and CHENG, Shih-Fen. [Mobility-driven BLE transmit-power adaptation for participatory data muling](#). *IEEE 24th International Conference on Parallel and Distributed Systems (ICPADS)*. Singapore, December 11-13 2018.
- Journal
  - **HAN, Chung-Kyun**; KIM, Baek-Hyun; JEONG, Rag-Gyo; and HA, Byung-Hyun. [A Dispatching and Routing Algorithm for Personal Rapid Transit by Considering Congestion](#). *The Transactions of the Korean Institute of Electrical Engineers*, vol. 64, no. 11, pp. 1578-1586, 2015.
  - **HAN, Chung-Kyun**; KWON, Bo bae; KIM, Baek-Hyun; JEONG, Rag-Gyo; LEE, Hoon; and HA, Byung-Hyun. [An Online Personal Rapid Transit Dispatching Algorithm Based on Nearest Neighbor Dispatching Rule](#). *Journal of the Korea Society for Simulation*, vol. 23, no. 4, pp. 97-109, 2014.

## Experience

Mar. 2015 - Dec. 2015	Junior Researcher Institute of Logistics Innovation and Networking, Pusan National University Busan, South Korea
Mar. 2010 - Feb. 2013	Student Researcher Information & Knowledge Engineering Lab., Pusan National University Busan, South Korea
Apr. 2008 - Feb. 2010	Military Service Republic of Korea Army Gyeonggi, South Korea

## Education

Jan. 2016 -	Ph.D. candidate, School of Information System Singapore Management University, Singapore
Feb. 2015	Master of Science in Engineering, Industrial Engineering Pusan National University, Busan, South Korea Thesis: An Online Algorithm for Personal Rapid Transit Dispatching and Routing
Feb. 2013	Bachelor of Science in Engineering, Industrial Engineering (Minor: Mathematics) Pusan National University, Busan, South Korea Thesis: The Production Planning of the Oil Refining Industry Considering Certified Emission Reduction