

Seungwon Kim

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Summary: AI/ML Engineer specializing in large-scale simulation, optimization, and production ML systems deployed in mission-critical environments.

PROFESSIONAL EXPERIENCE

- **Incheon International Airport Corporation (IIAC)**

AI/ML Engineer, Operational DX Team

Incheon, South Korea

Feb. 2025 – Present

- Enhanced and deployed a passenger flow prediction and discrete-event simulation platform supporting 4 internal operational teams across 500+ daily flights.
- Improved simulation performance to complete full-day airport simulations in 20 seconds; achieved 92% accuracy in peak waiting passenger prediction and 85% accuracy in maximum queue length estimation.
- Estimated passenger check-in show-up distributions from observed completion data using distributional optimization (Wasserstein distance) solved via L-BFGS-B.
- Deployed system during 2025 peak seasons (summer, winter, Chuseok); contributed to maintaining total departure processing time at 51 minutes during record-high passenger volume (ICAO standard: <60 minutes).
- Implemented production infrastructure using FastAPI, Redis workers, PostgreSQL, React dashboard, and Docker deployment on air-gapped RHEL servers with Prometheus/Grafana monitoring.

- **Incheon International Airport Corporation (IIAC)**

AI/ML Research Engineer, Airport Research Institute

Incheon, South Korea

Mar. 2024 – Feb. 2025

- Designed and implemented the core discrete-event passenger flow simulation engine modeling end-to-end airport departure processes.
- Developed foundational simulation modules capturing passenger arrival patterns, check-in dynamics, and queue evolution.

- **Incheon International Airport Corporation (IIAC)**

Electrical Engineer, Aeronautical Ground Lighting & Airport Electrical Systems Teams

Incheon, South Korea

Dec. 2015 – Jan. 2025

- Maintained mission-critical airfield electrical infrastructure supporting safe airport operations.

PUBLICATIONS

- **Revisiting Pretraining with Adapters**

Seungwon Kim et al.

ACL 2021 Workshop on Representation Learning for NLP (Repl4NLP). Best Paper Award.

- **Using Pre-Trained Transformer for Better Lay Summarization**

Seungwon Kim.

EMNLP 2020 Workshop on Scholarly Document Processing.

EDUCATION

- **Georgia Institute of Technology**

Atlanta, GA

Jan. 2019 – Dec. 2020

Master of Science in Computer Science; GPA: 4.0/4.0

- **Kyungpook National University**

Daegu, South Korea

Mar. 2009 – Feb. 2016

Bachelor of Engineering in Electronics; GPA: 3.3/4.0

TECHNICAL SKILLS

Languages: Python, TypeScript/JavaScript, C++, SQL

Backend: FastAPI, Flask, Redis, PostgreSQL

ML/AI: PyTorch, TensorFlow, Scikit-learn, XGBoost

DevOps: Docker, Linux/RHEL, Prometheus, Grafana

Competitive Programming: Meta Hacker Cup 2023 Round 2 (Top 3.7%), Codeforces Expert