

Gyunam Park

Master's Student, Pohang University of Science and Technology

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Education

POSTECH(Pohang University of Science and Technology)

Pohang, S.Korea

M.S. in Industrial and Management Engineering

Expected Aug. 2019

- Thesis: *Predicting performances in business processes using deep neural networks*
- Supervisor: Prof. Minseok Song

UNIST(Ulsan Institute of Science and Technology)

Ulsan, S.Korea

B.S. in Technology Management, *Summa Cum Laude*

Aug. 2017

- GPA: 4.01/4.3
- Minor: Computer Science

Course highlights

Process mining, Machine learning, Deep learning, Algorithm, Database, Data Structure, System Analysis and Design, Object oriented programming, Time Series Analysis, Statistics, Probability and Random process, Operations Research, Discrete Optimization, Scheduling, Network theory, Dynamic programming

Research Interests

- Process Mining
- Data Science
- Online Operational Support
- Machine Learning and Deep Learning
- Manufacturing Process Analysis

Research Experience

Analytics and Information Management Lab

POSTECH, Pohang, S.Korea

Advisor: Prof. Minseok Song

Jun. 2017 - Present

- Development of algorithm for recommending best resource path using AI, *In cooperation with Samsung Electronics*
 - Defined process risks and recommended alternative resource path.
 - Designed and Analyzed configurable performance analysis system in manufacturing factory.
 - Implemented flexible and configurable process risk analysis system.
- Python-based Process Mining Framework
 - Analyzed and designed the framework to maximize the usability of the framework.
 - Develop script-based process mining framework on Python.
 - Deployed distributed computation to efficiently deal with big data.
- Development of best reference resource mining algorithm, *In cooperation with Samsung Electronics*
 - Analyzed semi-conductor manufacturing process by applying process mining techniques.
 - Developed Best Reference resource model mining algorithm.
 - Implemented an easy-to-use python GUI application performing established method.

Intelligent Enterprise Lab

UNIST, Ulsan, S.Korea

Advisor: Prof. Marco Commuzzi

Nov. 2016 - Jun. 2017

- Development of Instance-level Event Prediction Algorithm using Deep Learning
 - Developed end-to-end event prediction modeling algorithm using sequence to sequence learning algorithm.
 - Feature-engineered event log to apply learning algorithms

- Outpatient process analysis using process mining, *In cooperation with Seoul National University Borame Medical Center*
 - Analyzed and predicted length of stay by utilizing historic data of patients.
 - Figured out pattern of longer staying patients and the point where bottleneck occurred.
- Social Network Analysis on Imports Process of *Korean Ministry of Food and Drug Safety*
 - Applied Process mining concept to the historical data of imports
 - Detected outliers and conducted Social Network Analysis.

Conference Presentations

- **G. Park**, M. Song*, Prediction-based Resource Allocation using LSTM and maximum flow and minimum cost algorithm in *1st International Conference on Process Mining*, Aachen, Germany, June 24-26, 2019
- **G. Park**, M. Cho, M. Song*, J. Lee, A Methodology for Analyzing Inefficiencies in Semiconductor Logistics based on Logistics Data Warehouse in *Industrial Engineering and Management Science*, Kimdaejung Convention Center, Gwangju, S. Korea, April 10-13, 2019
- **G. Park**, J. Yoon, Caption Generation with Knowledge Graph: Deep Neural Network on Image and Graph in *11th Europe-Korea Conference on Science and Technology*, Glasgow, Scotland, August 20-24, 2018
- **G. Park**, M. Cho, M. Song*, J. Lee, Development on Optimal Resource Path Mining in Semiconductor industry in *Industrial Engineering and Management Science*, Gyeongju Hotel Hyundai, Gyeongju, S. Korea, April 4-7, 2018

Journal Papers

- **G. Park**, M. Song*, Predicting Performances in Business Processes using Deep Neural Networks *in preparation*.
- M. Cho, **G. Park**, M. Song*, J. Lee, Development of Reference Resource Model for Yield Enhancement *submitted to IEEE Transactions on Semiconductor Manufacturing*.

Teaching Experience

AI and IoT Technology Training Program

POSTECH, Pohang, S.Korea

Teaching Assistant

Oct. 2018

- Provided guidance of how to plot and visualize data using Python.
- Explained concepts of NoSQL and MongoDB.
- Demonstrated how to use MongoDB with Python.

POSCO AI-Expert Training Program

POSTECH, Pohang, S.Korea

Teaching Assistant

Jun. 2018

- Explained concepts of conformance checking and social network analysis in Process Mining.
- Demonstrated how to use open-source Process Mining tool(ProM).

Introduction to Optimization

POSTECH, Pohang, S.Korea

Teaching Assistant

Mar. 2018 - Jun. 2018

- Explained introductory concepts of optimization clearly and concisely.
- Provided guidance to solve homework problems; graded three examinations.

Database System

Pohang, S.Korea

Teaching Assistant

Sep. 2017 - Dec. 2017

- Explained difficult concepts in database system clearly and concisely.
- Provided guidance to undergraduate students researching mini projects.
- Counseled students experiencing difficulties in the course.

Honors & Awards

2011 - 2017 **8 consecutive Scholarships**, Academic Performance Scholarship

S.Korea

2015 - 2016 **Scholarship**, Samsung Dream Class Scholarships

S. Korea

2013 **3rd-prize Award**, UNIST Global Startup Competition

S. Korea

Skills

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|-------------------------|---|
| Programming | Python, Java, C/C++, R |
| Database Systems | DBMS(SQL), Spark |
| Modeling | Machine learning, Mathematical optimization |
| Simulation | Automod |

References

Prof. Minseok Song

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Prof. Marco Comuzzi

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