

Seungmin Jin

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Researcher

QUALIFICATION SUMMARY

Professional Experience

- 2016-Present + **Research Engineer**
IVADER Lab., UNIST
Visual Analytics for Big Data
(D3JS + Machine learning)
- 2015-2016 + **Data Engineer**
Mining Lab., DaumSoft
Big Data Mining & Monitoring
(Hadoop, Python, AWS,
OpenStack, Elastic Stack),
Natural language processing
(NLP)

Personal Profile

- Practical experiences using python for the natural language processing and time series analysis
- Creative and cooperative big data research engineer with strong backgrounds in Machine learning and Visual analytics
- Practical experiences in analyzing and visualizing big data using Node.js, React, Vue, D3JS, Hadoop, Spark, AWS stack.
- Successful designing and optimizing curated data applications for various clients

Education & Training

- 2019-2022 + **National Research University Higher School, PhD Computer Science**

Research Field :
XAI (Explainable AI), NLP, Time series analysis

Thesis, "Explainable Artificial Intelligence through Transformer Extension"
- 2016-2018 + **National Research University Higher School of Economics (HSE), Big Data Systems**

Thesis, "Author Identification in literature texts through Deep Learning"
- 2005-2012 + **Kyung Hee University, Bachelor of Economics**
(+2Y) Military Service
(+1Y) Specialization
- 2013-2014 + **Intern & Trainee Smart Cloud Master, KITA**
Information processing using web and cloud services. Data mining (CRISP-DM)

PROFESSIONAL EXPERIENCE DETAIL

- **Researcher**

- **UNIST IVADER (Interactive Visual Analysis and Data Exploration) Lab.**

Ulsan National Institute of Science and Technology (UNIST), Ulsan, South Korea
2016. August– Present

IVADER Lab. researches Visual analytics for big data using machine learning to help human decision making and communication. As a research engineer, I developed visual analytic systems using D3JS and machine learning.

- **Project Experiences in IVADER Lab.**

- ***Power Plants Data Visual Analytics using Deep Learning / 2018.4 - /***

This research project is developing Visual Analytics which detects system or devices failures of the power plants.

- ***Ulsan Traffic Data Visual Analytics System / 2017.6 - 2018.3 /***

This research project is developing a visual analytic system to provide understanding and prediction of traffic. I designed the visual analytic system using D3JS and mining traffic sensor data through a statistical method and unsupervised learning. / Client – Ulsan TBN (Traffic Broadcasting Network)

- ***Genome Data Visual Analytic System / 2016.1 - 2017.12***

This research project is developing a visual analytic system to easily analyze complex DNA data to help our client. The client has genetic diagnosis technology for cancer and provides the health information service using DNA analysis. I designed the comparable visual analytic system to analyze big DNA sequences data. / Client – [Geromics Technologies](#)

- **Data Engineer**

- **Daumsoft Mining Lab.**

Daumsoft, Seoul, South Korea

2015. January – 2016. June

Daumsoft Mining Lab. studies social network data, such as Twitter and Facebook through NLP, to provide business insights to their clients using. In 2016, Daumsoft analyzed 2 Petabytes data on AWS and OpenStack Cloud using Hadoop and Spark. As a data engineer, I built a data processing pipeline which handles data collection, transformation, and monitoring through Python Scripts, Hadoop, Kafka, and Elastic Stack. This infrastructure automatically reports unexpected results in data via email.

- **Project Experiences in Daumsoft Mining Lab.**

- **Dictionary Data Management System**

Business analytic services in Daumsoft rely on well-defined semantic dictionaries. I discovered that hierarchical data structure may reduce the size of dictionaries to 60%, and web data communication tools can remove many duplicated jobs among teams. I successfully completed this task by merging whole dictionaries into tree data structure and developing web data management system with Excel like user interface./ Client – Daumsoft

- **Smart Grid Sensor Data Visual Analytics**

The goal of this big data research project is to find out available business models using smart grid sensor data. There were about 200 TB log data generated from various sites, such as factories and houses. First, I did data mining using Hadoop Spark to understand data. Second, I made the web analytic system to explore and analyze data using the statistical method, K-means clustering and linear regression for the research team and client. /Client – Korea Smart Grid Institute

EDUCATION DETAIL

Phd of Computer Science

The National Research University Higher School of Economics, Moscow, Russia, 2019-2022. Taught in English, [full scholarships awards](#)

Master of Business Informatics – Big Data Systems,

The National Research University Higher School of Economics, Moscow, Russia, 2018. June, Taught in English, [full scholarships awards](#),

Bachelor of Economics – Econometrics specialization,

Kyung Hee University (KHU), Seoul, South Korea, 2013. February, [full scholarships awards](#)

TRAINING & INTERNSHIP DETAIL

Training / Smart Cloud Master, 2014. February – December

Korea International Trade Association, Seoul, South Korea

Intern / Financial Analyst, 2013. February – December

Meritz Fire & Marine Insurance Co, Ltd., Seoul, South Korea

PUBLICATION

A Visual Analytics System for Exploring, Monitoring, and Forecasting Road Traffic Congestion (2019).

IEEE transactions on visualization and computer graphics (2019).

<https://ieeexplore.ieee.org/abstract/document/8735916>

“Author Identification in Literature Texts through Deep Learning” (2018)

Master thesis at Higher School of Economics

Cryptoeconomics: Data Application for Token Sales Analysis (2017)

International Conference Information Systems 2017 Special Interest Group on Big Data Proceedings. 1. <http://aisel.aisnet.org/icis2017b/1>

CERTIFICATION

Engineer Information Processing, 2014. August. 22.

Human Resources Development Service of Korea

Smart Cloud Master Certification, 2014. December. 22.

Korea International Trade Association

SKILLS

Computer

- **Programing:** Java, Python, R, Matlab, JavaScript, Node.js, SQL, HTML5, CSS
- **Data visualization:** D3JS, Matplotlib, Kibana, Tableau
- **Machine learning:** Tensorflow, scikit-learn, Sompy
- **Big Data Analysis:** Hadoop, Spark, Kafka, Elastic Stack
- **Cloud Services:** Amazon AWS, OpenStack
- **Database :** Oracle, MariaDB, MongoDB, SQLite

Languages

Korean: Native, **English:** Fluent, **Russian:** Intermediate, **Japanese:** basic

Analysis

Transformer analysis, Data mining and visualization, Machine Learning, Natural Language Processing, Statistical inference