

Heungseok Park

SOFTWARE ENGINEER • VISUALIZATION EXPERT

SeongNam-si, Rep. of KOREA

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“The purpose of visualization is insight, not pictures.”

Profile

Software Engineer of CLOVA in NAVER. Lead in projects designing and developing data visualization systems for various domains. Currently working on as a data visualization researcher/engineer for a Cloud-based Machine Learning Platform service at NAVER Corporation. Interested in the field of data visualization and machine learning.

Work Experience

Clova AI Research, NAVER

SeongNam, S.Korea

VISUALIZATION ENGINEER & FRONT-END WEB DEVELOPER

Feb. 2018 - Now

- Managed front-end parts of a machine learning platform including planning, design, and development.
- Built various visual analytics systems for analyzing and optimizing machine learning models.
- Published various research papers related to machine learning platforms.
- Developed a Design system to reuse basic UI components within a consistent design theme.

3Secondz

Daejeon, S.Korea

VISUALIZATION ENGINEER & FRONT-END WEB DEVELOPER

May. 2017 - Jan. 2018

- Developed data visualization modules, where users can review and analyze their past driving records comprehensively.

Education

KAIST (Korea Advanced of Institute and Technology)

Daejeon, S.Korea

MASTER STUDENT IN GRADUATE SCHOOL OF CULTURE TECHNOLOGY

Mar. 2016 - Exp. Feb. 2018

- Research Assistant of Social Computing Lab
- Advisor: Wonjae Lee

Ajou University

Suwon, S.Korea

BACHELOR OF DIGITAL MEDIA IN COLLEGE OF INFORMATION AND TECHNOLOGY

Mar. 2010 - Feb. 2016

- Academic Scholarships for 7 semesters, *Cum laude*
- Advisor: Kyungwon Lee

University of Nevada, Las Vegas

Las Vegas, NV, U.S.

VISITING SCHOLAR IN HOWARD R. HUGHES COLLEGE OF ENGINEERING

Jan. 2015 - May. 2015

- Advisor: Si Jung Kim

Research & Publications

- **Heungseok Park**, Yoonsoo Nam, Ji-hoon Kim, and Jaegul Choo, “HyperTendrill: Visual Analytics for User-Driven Hyperparameter Tuning of Deep Neural Networks”, *IEEE Transactions on Visualization and Computer Graphics*, In Proc. IEEE VIS 2020 (VAST, acceptance rate: 24.8%), [paper], [website], [video].
- **Heungseok Park**, Jinwoong Kim, Minkyu Kim, Ji-hoon Kim, Jaegul Choo, Jung-Woo Ha, and Nako Sung, “VisualHyperTuner: Visual Analytics for User-Driven Hyperparameter Tuning of Deep Neural Networks”, In Proc. MLSys 2019, demonstration track [paper].
- Jinwoong Kim, Minkyu Kim, **Heungseok Park**, Ernar Kusdavitov, Dongjun Lee, Adrian Kim, Ji-Hoon Kim, Jung-Woo Ha, and Nako Sung, “CHOPT : Automated Hyperparameter Optimization Framework for Cloud-Based Machine Learning Platforms”, *arXiv* [paper].
- Hanjoo Kim, Minkyu Kim, Dongjoo Seo, Jinwoong Kim, **Heungseok Park**, Soeun Park, Hyunwoo Jo, KyungHyun Kim, Youngil Yang, Youngkwan Kim, Nako Sung, and Jung-Woo Ha, “NSML: Meet the MLaaS platform with a real-world case study”, *arXiv* [paper].
- **Heungseok Park** and Wonjae Lee, “What makes a Successful Course at MOOCs? The Effects of the Structural Positions in Review Networks on the Course’s Popularity and Satisfaction”, *Master thesis*, [paper].
- **Heungseok Park**, Hongjun Lim, Wonjae Lee, and Kyungwon Lee, “NetSet: A Systematic integration of visualization for analyzing set intersections with network”, In Proc. IEEE Pacific Visualization Symposium (PacificVis), Apr 2017 [paper] [video].
- Jee Jung Choi, Jungmin Kim, **Heungseok Park**, and Wonjae Lee, “Extracting Placeness from Social Media: an Ontology-Based System”, In Proc. IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Full paper, Aug 2017 [paper].
- **Heungseok Park**, Hongjun Lim, and Kyungwon Lee, “NetSet: Interactive Visualization for Analyzing Sets in Large Networks”, *IEEE VIS Conference, Visualization in Data Science (VDS) Symposium*, Poster, Oct 2015 [poster].

Patent

International

- “Apparatus for Visualizing Analysis of Set Relationship in Complex Network and Method Therefor”, Kyungwon Lee, Hongjun Lim, and **Heungseok Park**, *International Patent Application* PCT/KR2016/011868, Oct 2016 [document].

Domestic

- “Tuning Algorithm-Aware Visualization Method for Analyzing and Adjustment Hyperparameter Optimization Process of Machine Learning Models” **Heungseok Park** Ji-hoon Kim, and Jaegul Choo, *Korea Patent Pending*, in review, Nov. 2020 [document].
- “Apparatus and Method for Interactive Visualization for Analyzing Sets in Large Networks” Hongjun Lim, Kyungwon Lee, and **Heungseok Park**, *Korea Patent*, 10-1710606, Feb. 2017 [document].
- “Apparatus and Method for Interactive Visualization in Analyzing Multidimensional data in Complex Networks”, **Heungseok Park**, *Korea Patent Pending*, 10-2016-0101233, Aug. 2016 [document].

Services

Review **IEEE Conference on Visual Analytics Science and Technology (VAST)**,

2020

Projects

NSML: Naver Smart Machine Learning Platform

NAVER

FRONT-END WEB DEVELOPMENT, DATA VISUALIZATION

Feb. 2018 - Now

- Managed front-end parts of a machine learning platform including planning, design, and development.
- Built various visual analytics systems for machine learning including model analysis, hyperparameter optimization, neural architecture search, active learning, and others.
- Published and presented various research papers related to machine learning platforms (DEVIEW 2018, SysML 2019, LINE Conference 2019, NAVER AI Colloquium 2019, IEEE VIS 2020).
- Developed a Design system to reuse basic UI components within a consistent design theme.
- Maintained the cloud service used by over 1,000 machine learning engineers and researchers

An Interactive Visualization System of car racing data for reviewing racers' past games.

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FRONT-END WEB DEVELOPMENT, DATA VISUALIZATION, WEB-DESIGN

May. 2017 - Jan. 2018

- Front-end development, Interactive visualization, Web-design
- Live at [demo]

CommScope: An Interactive Visualization System of public opinions to 19th president candidates from Korean Online Community

Social Computing Lab, KAIST

FRONT-END WEB DEVELOPMENT, DATA VISUALIZATION

Dec. 2016 - May. 2017

- Front-end, Data analysis (text-mining), Interactive 3D network visualization, Web-design
- Live at [demo]
- Article at [Joonang Ilbo].

Development of Information Collection and Analysis Technique on Public Opinion related to Nuclear Energy based on Artificial Intelligent Big Data

Future Energy Policy Institute of Kyung Hee University

RESEARCH ASSISTANT

Oct. 2016 - Jun. 2017

- Twitter data crawling, data processing, network analysis & visualization

Research on Cultivation Plan of Technology Manpower against the Fourth Industrial Revolution

NRF (National Research Foundation), Korea Polytechnics

RESEARCH ASSISTANT

Oct. 2016 - Jan. 2017

- MOOC platform & online review community data crawling, data processing, network analysis & visualization

Analysis of public opinions related to city issues based on Online Social Big Data

Goyang City hall

RESEARCH ASSISTANT

Mar. 2017 - Jun. 2017

- Twitter data crawling, data processing, network analysis & visualization

Skills

Programming

JavaScript, Typescript, React, Data Visualization (d3.js, three.js, deck.gl), Python, R, LaTeX

Tools

Git, Adobe Illustrator, Premiere, XD, Phothoshop, Gephi, Processing

Languages

Korean, English