

## EDUCATION

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- Ph.D Student** | *Dept. of Computer Science and Engineering* Sep.2022 – Present  
Seoul National University Seoul, Korea
- Human-Computer Interaction Laboratory (advised by Dr. Jinwook Seo)
- MS Student** | *Dept. of Computer Science and Engineering* Sep.2020 – Aug.2022  
Seoul National University Seoul, Korea
- Switched to Ph.D program in Sep. 2022
- Bachelor of Science in Computer Science & Engineering** Mar.2016 – Aug.2020  
POSTECH Pohang, Korea
- Early graduation (seven semesters)
  - Graduated with honors (Magna Cum Laude)

## RESEARCH INTEREST

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Visual Analytics, High-dimensional Data Analysis, Reliability in Visualizations and Visual Analytics

## PUBLICATIONS

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### PREPRINTS

- [P02] **Hyeon Jeon**, Michaël Aupetit, DongHwa Shin, Aeri Cho, Seokhyeon Park, and Jinwook Seo. Sanity check for external clustering validation benchmarks using internal validation measures. *arXiv:2209.10042*
- [P01] **Hyeon Jeon**, Michaël Aupetit, Soohyun Lee, Hyung-Kwon Ko, Youngtaek Kim, and Jinwook Seo. Distortion-aware brushing for interactive cluster analysis in multidimensional projections. *arXiv:2201.06379*

### INTERNATIONAL JOURNALS

- [J05] Seokweon Jung, DongHwa Shin, **Hyeon Jeon**, Kiroong Choe, and Jinwook Seo. Monetexplorer: A visual analytics system for analyzing dynamic networks with temporal network motifs. *IEEE Transactions on Visualization and Computer Graphics*, 2023. early access
- [J04] **Hyeon Jeon**, Yun-Hsin Kuo, Michaël Aupetit, Kwan-Liu Ma, and Jinwook Seo. Classes are not clusters: Improving label-based evaluation of dimensionality reduction. *IEEE Transactions on Visualization and Computer Graphics (TVCG, Proc. VIS 2023)*, 2023. to appear.
- [J03] **Hyeon Jeon**<sup>\*</sup>, Ghulam Jilani Quadri<sup>\*</sup>, Hyunwook Lee, Paul Rosen, Danielle Albers Szafir, and Jinwook Seo. Clams: A cluster ambiguity measure for estimating perceptual variability in visual clustering. *IEEE Transactions on Visualization and Computer Graphics (TVCG, Proc. VIS 2023)*, 2023. to appear. (<sup>\*</sup>equal contribution), received **Best Paper Honorable Mention Award (Top 5% Submission)**
- [J02] **Hyeon Jeon**, Hyung-Kwon Ko, Jaemin Jo, Youngtaek Kim, and Jinwook Seo. Measuring and explaining the inter-cluster reliability of multidimensional projections. *IEEE Transactions on Visualization and Computer Graphics (TVCG, Proc. VIS 2021)*, 28(1):551–561, 2022
- [J01] Youngtaek Kim, Jaeyoung Kim, **Hyeon Jeon**, Young-Ho Kim, Hyunjo Song, Bohyoung Kim, and Jinwook Seo. Githru: Visual analytics for understanding software development history through git metadata analysis. *IEEE Transactions on Visualization and Computer Graphics (TVCG, Proc. VAST 2020)*, 27(2):656–666, 2021

### PEER-REVIEWED CONFERENCES

- [C09] Minsuk Chang, Donghun Kim, **Hyeon Jeon**, Seokweon Jung, and Jinwook Seo. Clever: Continual learning visualizer for detecting task transition failure. In *17th IEEE Pacific Visualization Conference (PacificVis)*, 2024. to appear.

- [C08] Changmin Jeon, Jiwon Ha, Hyolim Hong, **Hyeon Jeon**, Hyeonsang Eom, Heonyoung Yeom, and Jinwook Seo. Iolens: Visual analytics system for exploring storage i/o tracking process. In *17th IEEE Pacific Visualization Conference (PacificVis)*, 2024. to appear
- [C07] Hyung-Kwon Ko, **Hyeon Jeon**, Gwanmo Park, Dae Hyun Kim, Nam Wook Kim, Juho Kim, and Jinwook Seo. Natural language dataset generation framework for visualizations powered by large language models. In *2024 ACM Conference on Human Factors in Computing Systems (CHI)*, 2024. to appear
- [C06] Juhye Ha, **Hyeon Jeon**, DaEun Han, Jinwook Seo, and Changhoon Oh. Clochat: Understanding how people customize, interact, and experience personas in large language models. In *2024 ACM Conference on Human Factors in Computing Systems (CHI)*, 2024. to appear
- [C05] **Hyeon Jeon**, Aeri Cho, Jinhwa Jang, Soohyun Lee, Jake Hyun, Hyung-Kwon Ko, Jaemin Jo, and Jinwook Seo. Zadu: A python library for evaluating the reliability of dimensionality reduction embeddings. In *2023 IEEE Visualization and Visual Analytics (VIS)*, 2023. to appear.
- [C04] Hyung-Kwon Ko, Gwanmo Park, **Hyeon Jeon**, Jaemin Jo, Juho Kim, and Jinwook Seo. Large-scale text-to-image generation models for visual artists' creative works. In *28th ACM International Conference on Intelligent User Interfaces (IUI)*, 2023. to appear.
- [C03] **Hyeon Jeon**<sup>\*</sup>, Hyung-Kwon Ko<sup>\*</sup>, Soohyun Lee, Jaemin Jo, and Jinwook Seo. Uniform manifold approximation with two-phase optimization. In *2022 IEEE Visualization and Visual Analytics (VIS)*, pages 80–84, 2022. (\*equal contribution.)
- [C02] Sebeom Park, Soohyun Lee, Youngtaek Kim, **Hyeon Jeon**, Seokweon Jung, Jinwook Bok, and Jinwook Seo. Vant: A visual analytics system for refining parallel corpora in neural machine translation. In *15th IEEE Pacific Visualization Symposium (PacificVis)*, 2022. to appear. received **Best Visualization Notes (Top 1<sup>st</sup> Submission)**
- [C01] Youngtaek Kim, **Hyeon Jeon**, Young-Ho Kim, Yuhoon Ki, Hyunjoon Song, and Jinwook Seo. Visualization support for multi-criteria decision making in software issue propagation. In *14th IEEE Pacific Visualization Symposium (PacificVis)*, pages 81–85, 2021

## WORKSHOP PAPERS, POSTERS, AND DOMESTICS

- [O03] Hyung-Kwon Ko, **Hyeon Jeon**, Gwanmo Park, Dae Hyun Kim, Nam Wook Kim, Juho Kim, and Jinwook Seo. A vega-lite dataset and natural language generation pipeline with large language models. In *VIS 2023 NLVIZ Workshop: Exploring Research Opportunities for NL, Text, and Data Visualization*, 2023
- [O02] Seokweon Jung, DongHwa Shin, Jinwook Bok, Seokhyeon Park, **Hyeon Jeon**, Jinwook Seo, Insoo Lee, and Sooyoung Park. Interactive visual analytics system for criminal intelligence analysts with multiple coordinated views. *Journal of KIISE*, 50(1):47–56, 2023
- [O01] Youngtaek Kim, **Hyeon Jeon**, Kiroong Choe, Hyunjoon Song, Bohyoung Kim, and Jinwook Seo. Interactive visualization for exploring information fragments in software repositories. In *14th IEEE Pacific Visualization Symposium (PacificVis)*, 2021. (Poster)

## EXPERIENCES

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### RESEARCH EXPERIENCES

<b>Visiting Ph.D. Student</b>   <i>VIDi Lab. (advised by Dr. Kwan-Liu Ma)</i> University of California, Davis	Jul.2022 – Dec.2022 Davis, CA
<b>Undergraduate Intern</b>   <i>Human-Computer Interaction Lab.</i> Seoul National University	Jan.2020 – Aug.2020 Seoul, Korea
<b>Research Student</b>   <i>Algorithms Lab.</i> POSTECH	Jun.2019 – Aug.2019 Pohang, Korea
<b>Research Student</b>   <i>Computer Vision Lab.</i> POSTECH	Jan.2019 – Feb.2019 Pohang, Korea

## TEACHING EXPERIENCES

### Teaching Assistant

- Information Visualization and Visual Analytics, Seoul National University 2023 Fall, 2021 Fall
- Digital Computer Concept and Practice, Seoul National University 2020 Fall
  - \* Python programming
- Samsung AI Expert Program, Seoul National University 2023 Fall
  - \* Visual analytics for high-dimensional data
- Samsung DS<sup>2</sup> Program, Seoul National University 2021 Fall, 2021 Spring, 2020 Fall
  - \* Data visualization

### Tutoring & Mentoring

- Undergraduate Research Opportunities Program, Seoul National University 2023 Spring, 2021 Fall
- CSE Tutoring Program, POSTECH 2020 Spring, 2019 Fall
  - \* Algorithms (CSED331)
  - \* Automata and Formal Languages (CSED341)

## ACADEMIC SERVICES

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### PROGRAM COMMITTEE

- Video Showcase, ACM CHI Conference on Human Factors in Computing Systems (CHI) 2024

### CONFERENCE REVIEWER (EXTERNAL)

- IEEE Visualization and Visual Analytics (VIS) 2023, 2022
- Eurographics/IEEE VGTC Conference on Visualization (EuroVis) 2022-2024
- IEEE Pacific Visualization Symposium (PacificVis) 2022-2024
- ACM CHI Conference on Human Factors in Computing Systems (CHI) 2022-2024
- ACM Conference on Intelligent User Interfaces (IUI) 2023
- ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2024
- Conference on Neural Information Processing System (NeurIPS) 2022

### INVITED JOURNAL REVIEWER

- Visual Informatics 2022, 2021
- Journal of Visualization and Interaction (JoVI) 2023
- ACM Transactions on Knowledge Discovery from Data (TKDD) 2023
- IEEE Transactions on Geoscience and Remote Sensing (TGRS) 2024

### STUDENT VOLUNTEERS CHAIR

- IEEE Visualization and Visual Analytics (VIS) 2024

### STUDENT VOLUNTEER

- IEEE Pacific Visualization Symposium (PacificVis) 2023
- IEEE Visualization and Visual Analytics (VIS) 2023, 2022
- ACM CHI Conference on Human Factors in Computing Systems (CHI) 2022

## AWARDS & HONORS

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**Best Paper Honorable Mention** | *2023 IEEE Visualization and Visual Analytics (VIS 2023)* Oct. 2023  
Top 5% of all submissions [J03] Melbourne, Australia

<b>Best Visualization Notes</b>   <i>15<sup>th</sup> IEEE Pacific Visualization Symposium (PacificVis 2022)</i> Top 1 <sup>st</sup> of all submissions [C02]	Apr. 2022 Tsukuba, Japan
<b>Future Innovation Individual Award</b>   <i>SNU Brain Korea 21 (BK21)</i> Gold (1 <sup>st</sup> ) Award, Granted 3,000,000 KRW (equivalent to 2,700 USD)	Mar. 2023 Seoul, Korea
<b>Outstanding Research Individual Fellowship</b>   <i>SNU CSE Brain Korea 21 (BK21)</i> Granted 10,000,000 KRW (equivalent to 9,000 USD)	Mar. 2023 Seoul, Korea
<b>Star Student Researcher Award</b>   <i>SNU CSE Brain Korea 21 (BK21)</i> Granted 700,000 KRW (equivalent to 600 USD)	Mar. 2023 Seoul, Korea
<b>Special Recognitions for Outstanding Reviews</b> PacificVis 2024	2024
<b>Jigok Scholarship</b>   <i>POSTECH</i> Full scholarship throughout undergraduate	Mar.2016 – Aug.2020 Pohang, Korea

## TALKS & PRESENTATIONS

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### INVITED TALKS

#### **Making high-dimensional data analysis more reliable**

- KAIST (Kixlab) Feb. 2024
- Google Tech Talk Feb. 2024
- Carnegie Mellon University (Data Interaction Group) Feb. 2024
- Havard Medical School (HIDIVE Lab) Jan. 2024

#### **Making clusters more reliable**

- Sungkyunkwan University (Interactive Data Computing Lab) Aug. 2023
- Ulsan National Institute of Science & Technology (HAiV Lab) Aug. 2023
- Sejong University (Data Visualization Lab) May. 2023
- University of North Carolina, Chapel Hill (Dept. of Computer Science) Nov. 2022

#### **CLAMS: A Cluster ambiguity measure for estimating perceptual variability in visual clustering**

- Korea Software Congress 2023 Dec. 2023
- 2023 Computing Frontier Summer School, Seoul National University Aug. 2023

#### **Measuring and explaining the inter-cluster reliability of multidimensional projections**

- Korea Software Congress 2022 Dec. 2022

### PAPER PRESENTATIONS

- Clochat: Understanding how people customize, interact, and experience personas in large language models CHI 2024
- CLAMS: A cluster ambiguity measure for estimating perceptual variability in visual clustering VIS 2023
- Classes are not clusters: Improving label-based evaluation of dimensionality reduction VIS 2023
- Uniform manifold approximation with two-phase optimization VIS 2022
- Measuring and explaining the inter-cluster reliability of multidimensional projections VIS 2021

## PERSONAL INFO

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### SKILLS

**Languages:** English (Fluent), Korean (First Language)

**Programming:** c/cplusplus, Python, Java, JavaScript, TypeScript

**Visualizations:** WebGL, D3.js

**Parallel Computing:** OpenMP, CUDA, Numba

## PRESS COVERAGE

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**NAVER-SNU joint research, honored as 'Top 5%' paper at the prestigious data analysis conference.**

- The Electronic Times (Korean) Sep. 2023

**Measuring and explaining the inter-cluster reliability of multidimensional projections**

- Seoul National University Artificial Intelligence Institute (SNU AIIS) Tech Blog Apr. 2022

## REFERENCES

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**Jinwook Seo** | *Professor, Seoul National University*

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Graduate Advisor

**Young-Joo Suh** | *Professor, POSTECH*

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Undergraduate Advisor