

# Chunggi Lee

PHD STUDENT @ HARVARD UNIVERSITY

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## Education

### Harvard University

PH.D IN COMPUTER SCIENCE

- Advisor : [Prof. Hanspeter Pfister](#)

Boston, MA

Sep. 2023 - Noe

### Ulsan National Institute of Science and Technology

M.S IN ELECTRICAL AND COMPUTER ENGINEERING

- GPA : 4.17/4.3, Advisor : [Prof. Sungahn Ko](#)
- Thesis Title: GUIComp: A GUI Design Assistant with RealTime, MultiFaceted Feedback

Ulsan, South Korea

Mar. 2018 - Feb. 2020

### Ulsan National Institute of Science and Technology

B.S IN ELECTRICAL AND COMPUTER ENGINEERING

- Magna Cum Laude
- Thesis Title: A Visual Analytics System for Exploring, Monitoring, and Forecasting Road Traffic Congestion.

Ulsan, South Korea

Mar. 2014 - Feb. 2018

## Publications

### INTERNATIONAL

- P1. Han Kim\*, **Chunggi Lee\***, Junsoo Lee\*, Dohyun Kim, Kwangjin Lee, Moohyun Oh, Daesik Kim, “**FlatGAN: A Holistic Approach for Robust Flat-Coloring in High-Definition with Understanding Line Discontinuity.**”, ACM Multimedia ([MM](#)), 2023.
- P2. Cholmin Kang, **Chunggi Lee**, Heon Song, Minuk Ma, Sergio Pereira, “**Variability Matters : Evaluating inter-rater variability in histopathology for robust cell detection.**”, European Conference on Computer Vision Workshop On AI-Enabled Medical Image Analysis ([ECCVW](#)), 2022. [[PDF](#)]
- P3. **Chunggi Lee**, Seonwook Park, Heon Song, Jeongun Ryu, Sanghoon Kim, Haejoon Kim, Sergio Pereira, Donggeun Yoo, “**Interactive Multi-Class Tiny-Object Detection.**”, IEEE Conference on Computer Vision and Pattern Recognition ([CVPR](#)), 2022. [[PDF](#)] [[VIDEO](#)]
- P4. Cheonbok Park, **Chunggi Lee**, Hyojin Bahng, Yunwon Tae, Kihwan Kim, Seungmin Jin, Sungahn Ko, Jaegul Choo, “**ST-GRAT: A novel spatio-temporal graph attention networks for accurately forecasting dynamically changing road speed.**”, ACM International Conference on Information and Knowledge Management ([CIKM](#)), 2020 (20.9% acceptance rate). [[PDF](#)]
- P5. **Chunggi Lee**, Sanghoon Kim, Dongyun Han, Hongjun Yang, Young-Woo Park, Bum Chul Kwon, Sungahn Ko, “**GUIComp: A GUI Design Assistant with RealTime, MultiFaceted Feedback**”, ACM CHI Conference on Human Factors in Computing Systems ([CHI](#)), 2020, Accepted. [[PDF](#)] [[Preview Video](#)] [[VIDEO](#)]
- P6. **Chunggi Lee**, Yeonjun Kim, Seungmin Jin, Dongmin Kim, Ross Maciejewski, David Ebert, and Sungahn Ko, “**A Visual Analytics System for Exploring, Monitoring, and Forecasting Road Traffic Congestion.**” IEEE transactions on visualization and computer graphics ([TVCG](#) IF=4.579), 2019 (Proc. [IEEE VIS'19](#)), Accepted. [[LINK](#)] [[PDF](#)] [[VIDEO](#)] [[NEWS1](#)] [[NEWS2](#)] [[NEWS3](#)]

### PREPRINT, POSTER, DOMESTIC

- D1. Hyunwook Lee, **Chunggi Lee**, Hongkyu Lim, Sungahn Ko, “**TILDE-Q: A Transformation Invariant Loss Function for Time-Series Forecasting.**”, (Under Review), 2022.
- D2. Hongkyu Lim, Jungeun Lee, Hyunwook Lee, **Chunggi Lee**, Seungmin Jin, Jeong Hwan Jeon and Sungahn Ko, “**DOTG: Demand-Oriented Trajectory Generator for High Ridership in Demand-Responsive Transport.**”, (Under Review), 2022.
- D3. Juyoung Oh, **Chunggi Lee**, Hwiyeon Kim, Kihwan Kim, Osang Kwon, Eric D. Ragan, Bum Chul Kwon, Sungahn Ko, “**An Empirical Study on the Relationship Between the Number of Coordinated Views and Visual Analysis.**”, Arxiv. [[PDF](#)]
- D4. **Chunggi Lee**, Juyoung Oh, Seungmin Jin, Isaac Cho, and Sungahn Ko, “**A Graphical Workflow Exploration Environment For Visual Analytics.**”, Arxiv. [[PDF](#)]
- D5. Yunha Han, **Chunggi Lee**, Sanghoon Kim, Sungahn Ko, “**System Architecture for Progressive Augmented Reality.**”, ([MobiSys](#)), 2019 (Poster)
- D6. Kihwan Kim, Sanghoon Kim, **Chunggi Lee**, Sungahn Ko, “**Modeling Exploration/Exploitation Decisions through Mobile Sensing for Understanding Mechanisms of Addiction.**”, ([MobiSys](#)), 2019 (Poster)
- D7. J. Lee, K. Kim, **C. Lee**, and S. Ko, “Visualization based Deep Learning Analysis Technology.” The Korean Society for Noise and Vibration Engineering ([KSNVE](#)), 2017, Accepted. [[LINK](#)] [[PDF](#)]
- D8. Y. Oh, **C. Lee**, J. Oh, J. Yang, H. Gwag, S. Moon, S. Park, and S. Ko, “Introduction of Visual Analytics.” [Korea Computer Graphics Society](#), 2016, Accepted. [[LINK](#)] [[PDF](#)]

## Professional Experience

### Naver Webtoon AI.

Gyeonggi-do, South Korea

RESEARCHER SCIENTIST (ALTERNATIVE MILITARY SERVICE) [LINK]

Aug 2022 - Aug 2023

- Conducted research on **stable diffusion models** to support the process of webtoon (comics) creation
- Designed and built an **AI platform** frontend and backend to distribute deep learning models for users.

### Lunit Inc.

Seoul, South Korea

RESEARCHER ENGINEER (ALTERNATIVE MILITARY SERVICE) [LINK]

Mar 2020 - Aug-2022

- Designed and built interactive deep learning models for reducing cost of annotations (e.g., **object detection** and **segmentation**). (P2)
- Implemented an annotation tool and an internal operation tool with **Django, DRF, React, and mui**.
- Deployed and served deep learning models by using **TorchServe and Fast API**.
- Analyzed quality of pathology data which have significant different among experts and proposed a new method for evaluating pathology large-scale dataset (P1)

### Interactive Visual Analysis & Data Exploration Research Lab

Ulsan, South Korea

RESEARCHER & DEVELOPER [LINK]

Jun 2016 - Mar 2020

- Built interactive tools and visual analytic systems for **mobile GUI design authoring for novice** (P4), **traffic congestion forecasting and propagation** (P5), **multiple coordinate visualization** (D3), and **gene expression** (D4).
- Implemented **spatio-temporal deep learning models** (P3), mobile GUI recommendation deep learning, biomedical data clustering

## Presentation

### Naver TechTalk

Seoul, South Korea

PRESENTER FOR <DEEP LEARNING MODEL FOR TRAFFIC FORECASTING>

Aug. 2019

- Introduced Deep Learning Model for Traffic Forecasting - DCRNN, LCRNN, STGCN, and GAAN [PDF]

## Honors & Awards

2017 **4th Place & Bronze Prize**, National Super Computing Competition

Ulsan, South Korea

& KISTI & UNIST

2017 **3rd Place & Bronze Prize**, Naver UNIST Undergraduate Poster Award '17 UNIST \$1,500 [POSTER]

Naver & UNIST

2016 & **Semester GPA 3.94/4.3, GPA 3.93/4.3**, Semester Academic Excellence Award for 2016 Fall Semester, 2017 Fall Semester

UNIST

2016 **3rd Place**, HeXAThon, Develop Customization Interior Design VR Application, Received an award of \$500

Ulsan, South Korea

& NAVER

2016 **3rd Place**, Competition of Using Public Data of Ministry of Trade, Industry and Energy, Develop Emotional Color Combination VR Application, Received an award of \$1,000

Seoul, South Korea

& Ministry of Trade,

Industry and Energy

## Patent

- **Graphic User Interface Assistant Device and Method in Mobile Environment** – Application Number : 10-2019-0001190
- **Traffic Information Visualization Analysis Device and Method** – Application Number : 10-2018-0079727 (Acquired - \$0.1M)

## Services

2023 **Reviewer**, ACM CHI LBW, IEEE VIS

2019 **Student Volunteer**, IEEE VIS

2019 **Teaching Assistant**, Object Oriented Programming

2015 **Teaching Assistant**, Engineering Programming II

2015 **Lecturer**, World Friends IT Volunteer

Vancouver, Canada

Ulsan, South Korea

Ulsan, South Korea

Ulaanbaatar,

Mongolia