

# Seongmin Lee

*CS PhD student at Georgia Tech*

My research bridges machine learning and human-computer interaction to advance **Responsible AI**. I design and develop **novel visual explanations** for complex machine learning models, and **scalable algorithms** that promote accountable use of AI.

I have collaborated with researchers and developers at Adobe, Google, JP Morgan Chase & Co., Cisco Systems, IBM Research, ADP, and AVAST Software.

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📄 CV PDF

🐦 @SeongminLeee

🔗 @ligi214

🎓 Google Scholar

## Education

Aug. 2021 — Present

### **Ph.D. in Computational Science & Engineering**

Georgia Institute of Technology, Atlanta, GA

Advisor: Duen Horng (Polo) Chau

Mar 2016 — Feb. 2021

### **B.S. in Electrical and Computer Engineering**

Seoul National University, Seoul, South Korea

Graduated with Summa Cum Laude, Overall GPA: 3.91/4.00, Major GPA: 3.94/4.00

Mar 2013 — Feb. 2016

### **Math and Science Specialized High School for Gifted**

Korea Science Academy of KAIST, Busan, South Korea

One year early entrance, Graduated with distinction in GPA

## Research Experience

May 2025 — Present

### **Adobe Inc.**, San Jose, CA

*AI/ML Intern - Machine Learning Engineer/Researcher*

Mentor: Oliver Brdiczka, Tianyuan Cao, Anelise Newman, Gahye Park, Eric Slyman

May 2024 — Aug. 2024

### **JP Morgan Chase & Co.**, New York, NY

*Summer Associate, Research Technologies Program*

Mentor: Hsiang Hsu, Chun-Fu (Richard) Chen

May 2022 — Jul. 2022

### **Cisco Systems, Inc.**, San Jose, CA

*Ph.D. Intern*

Mentor: Ali Payani

Aug. 2021 — Present

### **Georgia Institute of Technology**, Atlanta, GA

*Graduate Research Assistant, School of Computational Science and Engineering*

Advisor: Duen Horng (Polo) Chau

Jan. 2020 — Feb. 2021

### **Seoul National University**, Seoul, South Korea

*Undergraduate Research Intern, Data Mining Lab*

Advisor: U Kang

Sep. 2019 — Apr. 2020

### **Seoul National University**, Seoul, South Korea

*Undergraduate Research Intern, Communication and Machine Learning Laboratory*

Advisor: Jungwoo Lee

**The University of Tokyo**, Tokyo, Japan*Undergraduate Research Intern, Biomedical Precision Laboratory*

Advisor: Keiichi Nakagawa, Ayumu Ishijima

Constructed a microscopic motion-picture laser camera with sub-nano spatial/temporal resolution, Investigated interaction between human cells and acoustic waves in collaboration with students majoring in biology and physics

## Honors and Awards

- 2025 The Korean Honor Scholarship (KHS)
- 2025 Next-generation Science and Technology Leader NET
- 2025 NCWIT AiC Collegiate Award Finalist
- 2024 IEEE BigData Student Travel Award
- 2024 NeurIPS SoLaR Workshop Travel Fund Award
- 2024 IEEE VIS Best Poster Award  
Transformer Explainer receives Best Poster Award at VIS 2024.
- 2023 Next-generation Science and Technology Leader NET
- 2021 CS7001 Best Final Project Award Honorable Mention  
Awarded for the project 'VisCUI: Visual Auditor for Bias in CNN Image Classifier' in CS7001, a course taken by all first-year CS Ph.D. students at Georgia Tech. 2nd place among 60+ presentations.
- 2016 - 2019 The Presidential Science Scholarship  
Full tuition and stipend of \$5,000 per year. Around 150 students are selected nationally.
- 2018 - 2019 SNU Engineering Honor Society (STEM)  
Used to be vice president, currently honorary member.
- 2017, 2018 Seoul National University ECE Voluntary Service Award  
Selected based on the evaluation of the students, staffs, and faculty members of department of ECE.
- 2014 - 2015 Hansung Sonjaehan Scholarship  
Stipend of \$5,000 per year. Around 150 high school students studying math and science are selected nationally.

## Publications

### Interpretation Meets Safety: A Survey on Interpretation Methods and Tools for Improving LLM Safety

Seongmin Lee, Aeree Cho, Grace C. Kim, ShengYun Peng, Mansi Phute, Duen Horng (Polo) Chau  
*ArXiv (ArXiv)*. 2025.[Project](#) [PDF](#) [BibTeX](#)

### Probing LLM Hallucination from Within: Perturbation-Driven Approach via Internal Knowledge

Seongmin Lee, Hsiang Hsu, Chun-Fu Chen, Duen Horng (Polo) Chau  
*ArXiv (ArXiv)*. 2025.[Project](#) [PDF](#) [BibTeX](#)

### LLM Attributor: Interactive Visual Attribution for LLM Generation

Seongmin Lee, Zijie J. Wang, Aishwarya Chakravarthy, Alec Helbling, ShengYun Peng, Mansi Phute, Duen Horng (Polo) Chau, Minsuk Kahng  
*Demo, Annual AAAI Conference on Artificial Intelligence (AAAI)*. 2025.[Project](#) [PDF](#) [Recording](#) [Code](#) [BibTeX](#)

### Effective Guidance for Model Attention with Simple Yes-no Annotations

Seongmin Lee, Ali Payani, Duen Horng (Polo) Chau  
*Oral Paper, IEEE International Conference on Big Data (BigData)*. 2024.[Project](#) [PDF](#) [Code](#) [BibTeX](#) [Student Travel Award](#)

### LLM Hallucination Reasoning with Zero-shot Knowledge Test

Seongmin Lee, Hsiang Hsu, Chun-Fu (Richard) Chen

38th Conference on Neural Information Processing Systems (NeurIPS 2024) Socially Responsible Language Modelling Research Workshop (SoLaR). 2024.

[Project](#) [PDF](#) [BibTeX](#) [🏆 SoLaR Workshop Travel Fund Award](#)

### Diffusion Explainer: Visual Explanation for Text-to-image Stable Diffusion

Seongmin Lee, Benjamin Hoover, Hendrik Strobelt, Zijie J. Wang, ShengYun Peng, Austin P. Wright, Kevin Li, Haekyu Park, Haoyang Yang, Duen Horng (Polo) Chau

Short Paper, IEEE Visualization Conference (VIS). 2024.

[Project](#) [Demo](#) [PDF](#) [Recording](#) [Poster](#) [Code \(★221\)](#) [BibTeX](#)

### Transformer Explainer: Interactive Learning of Text-Generative Models

Aeree Cho, Grace C Kim, Alexander Karpekov, Alec Helbling, Zijie J. Wang, Seongmin Lee, Benjamin Hoover, Duen Horng (Polo) Chau

Poster, IEEE Visualization Conference (VIS). 2024.

[Project](#) [Demo](#) [PDF](#) [Recording](#) [Code \(★3.1k\)](#) [BibTeX](#) [🏆 Best Poster](#)

### SuperNOVA: Design Strategies and Opportunities for Interactive Visualization in Computational Notebooks

Zijie J. Wang, David Munechika, Seongmin Lee, Duen Horng (Polo) Chau

Extended Abstracts on ACM Human Factors in Computing Systems (CHI). 2024.

[Project](#) [Demo](#) [PDF](#) [Code \(★62\)](#) [BibTeX](#)

### UniTable: Towards a Unified Framework for Table Structure Recognition via Self-Supervised Pretraining

ShengYun Peng, Seongmin Lee, Xiaojing Wang, Rajarajeswari Balasubramaniyan, Duen Horng (Polo) Chau

ArXiv. 2024.

[Project](#) [PDF](#) [Code \(★354\)](#) [BibTeX](#)

### ClickDiffusion: Harnessing LLMs for Interactive Precise Image Editing

Alec Helbling, Seongmin Lee, Duen Horng (Polo) Chau

CVPR 2024 Workshop on AI for Content Creation Workshop (CVPR). 2024.

[Project](#) [PDF](#) [Code \(★65\)](#) [BibTeX](#)

### Mobile Fitting Room: On-device Virtual Try-on via Diffusion Models

Justin Blalock, David Munechika, Harsha Karanth, Alec Helbling, Pratham Mehta, Seongmin Lee, Duen Horng (Polo) Chau

CVPR 24 Workshop on Virtual Try-On (CVPR). 2024.

[Project](#) [PDF](#) [BibTeX](#)

### High-Performance Transformers for Table Structure Recognition Need Early Convolutions

ShengYun Peng, Seongmin Lee, Xiaojing Wang, Rajarajeswari Balasubramaniyan, Duen Horng (Polo) Chau

Oral Paper, Neural Information Processing Systems (NeurIPS) TRL Workshop (TRL). 2023.

[Project](#) [PDF](#) [Code](#) [BibTeX](#)

### VisGrader: Automatic Grading of D3 Visualizations

Matthew Hull, Vivian Pednekar, Hannah Murray, Nimisha Roy, Emmanuel Tung, Susanta Routray, Connor Guerin, Justin Chen, Zijie J. Wang, Seongmin Lee, Mahdi Roozbahani, Duen Horng (Polo) Chau

Full Paper, IEEE Visualization and Visual Analytics (VIS). 2023.

[Project](#) [PDF](#) [Code](#) [BibTeX](#)

### Concept Evolution in Deep Learning Training: A Unified Interpretation Framework and Discoveries

Haekyu Park, Seongmin Lee, Benjamin Hoover, Austin Wright, Omar Shaikh, Rahul Duggal, Nilaksh Das, Judy Hoffman, Duen Horng (Polo) Chau

Full Paper, ACM International Conference on Information and Knowledge Management (CIKM). 2023.

[Project](#) [PDF](#) [Code](#) [BibTeX](#) [DOI](#)

### Explaining Website Reliability by Visualizing Hyperlink Connectivity

Seongmin Lee, Sadia Afroz, Haekyu Park, Zijie J. Wang, Omar Shaikh, Vibhor Sehgal, Ankit Peshin, Duen Horng (Polo) Chau

*Short Paper, IEEE Visualization and Visual Analytics (VIS). 2022.*

[Project](#) [Demo](#) [PDF](#) [BibTeX](#)

### NOVA: A Practical Method for Creating Notebook-Ready Visual Analytics

Zijie J. Wang, David Munechika, Seongmin Lee, Duen Horng (Polo) Chau

*Poster Paper, IEEE Visualization and Visual Analytics (VIS). 2022.*

[Project](#) [Demo](#) [PDF](#) [Poster](#) [Code](#) [BibTeX](#)

### VisCUI: Visual Auditor for Bias in CNN Image Classifier

Seongmin Lee, Zijie J. Wang, Judy Hoffman, Duen Horng (Polo) Chau

*Demo Paper, Conference on Computer Vision and Pattern Recognition (CVPR). 2022.*

[Project](#) [Demo](#) [PDF](#) [Recording](#) [Code](#) [BibTeX](#)

### MisVis: Explaining Web Misinformation Connections via Visual Summary

Seongmin Lee, Sadia Afroz, Haekyu Park, Zijie J. Wang, Omar Shaikh, Vibhor Sehgal, Ankit Peshin, Duen Horng (Polo) Chau

*Extended Abstracts on ACM Human Factors in Computing Systems (CHI). 2022.*

[Project](#) [Demo](#) [PDF](#) [BibTeX](#) [DOI](#)

### Multi-EPL: Accurate Multi-source Domain Adaptation

Seongmin Lee, Hyunsik Jeon, U Kang

*Public Library of Science (PLOS ONE). 2021.*

[Project](#) [PDF](#) [Code](#) [BibTeX](#)

### Unsupervised multi-source domain adaptation with no observable source data

Hyunsik Jeon, Seongmin Lee, U Kang

*Public Library of Science (PLOS ONE). 2021.*

[Project](#) [PDF](#) [Code](#) [BibTeX](#)

### Auber: Automated BERT Regularization

Hyun Dong Lee\*, Seongmin Lee\*, U Kang

*Public Library of Science (PLOS ONE). 2021.*

[Project](#) [PDF](#) [Code](#) [BibTeX](#) \*Authors contributed equally

## Patent

### Pruning Method for Attention Head in Transformer Neural Networks for Regularization and Apparatus Thereof

Seongmin Lee, Hyun Dong Lee, U Kang

10-2020-0162397, 2020.

## Book

### I Got to Wish to Go Engineering School

SNU Engineering Honor Society (STEM)

*Megastudy Books, 2021.*

Wrote Part 3 "Life as a Lab Intern"

## Invited Talks

### Will AI Take Over the World? Understanding Risks in ChatGPT

UGAxGT Graduate Research Seminar

Mar 2025	<b>LLM Attributor: Interactive Visual Attribution for LLM Generation</b> Georgia Tech, School of CSE Recruiting Event
Mar 2025	<b>Will AI Take Over the World? Understanding AI's Realistic Risks</b> Women in GTKSA Research & Career Seminar
Aug 2024	<b>Expanding Your Career Canvas: Pitching Strategies for Diverse Audiences</b> Fostering Innovation in Rising Experts (FIRE) at United States-Korea Conference (UKC)
Nov 2023	<b>Diffusion Explainer: Diffusion Explainer: Visual Explanation for Text-to-image Stable Diffusion</b> Georgia Tech, School of CSE Recruiting Event
Nov 2023	<b>Student Panel for Prospective Students</b> Georgia Tech, School of CSE Recruiting Event
May 2023	<b>STEM Global Engineer Seminar</b> Seoul National University, SNU Engineering Honor Society (STEM)
Nov. 2022	<b>MisVis: Explaining Website Reliability by Visualizing Hyperlink Connectivity</b> Georgia Tech, School of CSE Recruiting Event
Mar. 2022	AVAST Software, Fake News Monthly Sync Up
Jun. 2020	<b>Multi-Source Domain Adaptation with Pseudo-labels</b> Seoul National University, AIIS Retreat
Jul. 2019	<b>STEM Vision Mentoring</b> Seoul National University, STEM Vision Mentoring Organized and gave lectures on engineering for high school students. More than 700 students attended.

## Teaching

Spring 2024	<b>Graduate Teaching Assistant</b> <i>Georgia Institute of Technology, Atlanta, GA</i> Data and Visual Analytics (CSE6242), Instructor: Duen Horng (Polo) Chau, Mahdi Roozbahani Online course with 1201 graduate students enrolled.
Fall 2022	<b>Graduate Teaching Assistant</b> <i>Georgia Institute of Technology, Atlanta, GA</i> Data and Visual Analytics (CSE6242), Instructor: Duen Horng (Polo) Chau, Mahdi Roozbahani Online course with 1146 graduate students enrolled.
Jan. 2021	<b>Lab Session Lecturer</b> <i>LG Chem, Seoul, South Korea</i> Deep Learning Course
Nov. 2020	<b>Lab Session Lecturer</b> <i>SK Hynix, Seoul, South Korea</i> Deep Learning Course
Fall 2020, Fall 2019	<b>Undergraduate Student Tutor</b> <i>Seoul National University, Seoul, South Korea</i> Introduction to Algorithm Selected as tutor for two consecutive years based on interviews and academic performance
Spring 2017	<b>Undergraduate Student Tutor</b> <i>Seoul National University, Seoul, South Korea</i> Introduction to Physics I Selected as tutor based on academic performance

# Mentoring

Fall 2023 — Present	<b>Sri Ranganathan Palaniappan</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i>
Fall 2024 — Present	<b>Kunal Mohindra</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i>
Fall 2023 — Fall 2024	<b>Aishwarya Chakravarthy</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i>
Fall 2023 — Fall 2024	<b>Grace Kim</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i>
Fall 2023 — Fall 2024	<b>Alexander Karpekov</b> <i>M.S. in Computer Science, Georgia Institute of Technology</i> Now: CS Ph.D. at Georgia Institute of Technology
Fall 2023 — Fall 2024	<b>Aeree Cho</b> <i>M.S. in Computer Science, Georgia Institute of Technology</i> Now: ML Ph.D. at Georgia Institute of Technology
Fall 2021 — Fall 2023	<b>David Munechika</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i> Now: Machine Learning Engineer at Apple
Fall 2021 — Spr. 2023	<b>Kevin Li</b> <i>B.S. in Computer Science and Biomedical Engineering, Georgia Institute of Technology</i> Now: ML Ph.D. at Carnegie Mellon University
Fall 2021 — Spr. 2023	<b>Alex Yang</b> <i>M.S. in Computer Science, Georgia Institute of Technology</i> Now: CS Ph.D. at Georgia Institute of Technology
Fall 2021 — Spr. 2022	<b>Omar Shaikh</b> <i>B.S. in Computer Science, Georgia Institute of Technology</i> 🏆 Sigma Xi Best Undergraduate Research Award, Georgia Institute of Technology Now: CS Ph.D. at Stanford University

# Grants and Funding

2024	<b>Democratizing Visual AI: Enhancing Efficiency and Usability of Large Vision Models for Fostering Under-Resourced Access</b> NSF Medium Grant Co-PIs: Judy Hoffman, Celine Lin, Duen Horng (Polo) Chau Co-authored winning proposal. Contributed to experiment with on-device implementation of the CLIP model.
2023	<b>Scaling Up Educators' Capacities: Automating Visualization Assessment via Generative AI</b> Google Award for Inclusion Research Co-PIs: Duen Horng (Polo) Chau Co-authored a proposal resulting in \$60k resesarch funding from Google.
2022	<b>Cisco Research Funding</b> Co-PIs: Duen Horng (Polo) Chau Co-authored a proposal resulting in \$200k resesarch funding on responsible AI from Cisco.

# Service

## Reviewer

Annual Meeting of the Association for Computational Linguistics (**ACL**), 2025

ACM CHI conference on Human Factors in Computing Systems (**CHI**), 2025

IEEE Pacific Visualization Conference (**PacificVis**), 2025

7th Workshop on Visualization for AI Explainability (**VISxAI**), 2024

ACM Conference On Computer-Supported Cooperative Work and Social Computing (**CSCW**), 2023

## Institutional

2021 – Present	<b>Georgia Tech Korean Student Association</b> Serving as a president. Have served as treasury, web administrator, and recruitment officer. Organize events for Korean graduate students at Georgia Tech.
2022 – 2024	<b>Georgia Tech CSE Website Committee</b> Improve external and internal communication in collaboration with a communication officer and faculty members
2017 – 2021	<b>Seoul National University ECE Student Reporter</b> Published a magazine about research, people, and events of Department of ECE every semester.
2020	<b>SNU Buddy</b> Selected as the best buddy out of over 60 buddy students based on the votes from international exchange students.
2018, 2019	<b>Dream Camp Mentoring</b> Conducted mentoring program about "how to materialize one's dream" for high school students in countryside
2018	<b>Young Generation Forum (YGF)</b> Hosted by KOFST to bring young Korean heritage students from all over the world. Attended as a Korean delegate.
2017 – 2018	<b>Seoul National University ECE Student Vice President</b> Elected from student vote.
2016, 2017	<b>KOSAF Talent Sharing Volunteer Camp</b> Conducted self-planned mentoring for elementary school students in underprivileged areas in Korea

## Member

2021 – Present	Association for Computing Machinery ( <b>ACM</b> )
2021 – Present	Institute of Electrical and Electronics Engineers ( <b>IEEE</b> )
2018 – 2019	SNU Engineering Honor Society ( <b>STEM</b> )

# References

**Dr. Polo Chau**, Associate Professor

School of Computational Science and Engineering

*Georgia Institute of Technology*

[cc.gatech.edu/~dchau/](https://cc.gatech.edu/~dchau/)