

# Sejoon Oh

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## RESEARCH INTERESTS

Adversarial Machine Learning, Recommender Systems, Natural Language Processing, Data Science

## EDUCATION

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

- Third-year Ph.D. Student in Computer Science Aug. 2019 – May 2024 (expected)
- Advisor: Prof. Srijan Kumar

**Carnegie Mellon University**, Pittsburgh, PA

- First-year Ph.D. Student in CPCB program Aug. 2018 – May 2019

**Seoul National University**, Seoul, Korea

- Bachelor of Science (B.S.) in Computer Science and Engineering Mar. 2012 – Aug. 2018
  - Overall GPA: 3.68 / 4.0, Major GPA: 3.67 / 4.0
- Advisor: Prof. U Kang

## PUBLICATIONS

### JOURNAL PAPERS

- [J4] Kijung Shin, **Sejoon Oh**, Jisu Kim, Bryan Hooi, and Christos Faloutsos, “Fast, Accurate and Provable Triangle Counting in Fully Dynamic Graph Streams”, *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2020.
- [J3] **Sejoon Oh**, Namyong Park, Jun-Gi Jang, Lee Sael, and U Kang, “High-Performance Tucker Factorization on Heterogeneous Platforms”, *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2019.
- [J2] Namyong Park, **Sejoon Oh**, and U Kang, “Fast and Scalable Method for Distributed Boolean Tensor Factorization”, *VLDB Journal*, 2019.
- [J1] **Sejoon Oh\***, Jungwoo Lee\*, and Lee Sael, “GIFT: Guided and Interpretable Factorization for Tensors with an Application to Large-Scale Multi-platform Cancer Analysis”, *Bioinformatics*, 2018 (\* these authors contributed equally to this work).

### CONFERENCE PAPERS

- [C6] **Sejoon Oh**, Julian McAuley, Berk Ustun, and Srijan Kumar, “Rank List Sensitivity of Recommender Systems to Interaction Perturbations”, *ACM International Conference on Information and Knowledge Management (CIKM; to appear)*, 2022.
- [C5] **Sejoon Oh**, Jongseok Han, Ankur Bharadwaj, Sungchul Kim, Ryan A. Rossi, and Srijan Kumar, “Implicit Session Contexts for Next-Item Recommendations”, *ACM International Conference on Information and Knowledge Management (CIKM; to appear)* Short, 2022.
- [C4] Walid Shalaby, **Sejoon Oh**, Amir Hossein Afsharinejad, Xiquan Cui, and Srijan Kumar, “M2TRec: Metadata-aware Multi-task Transformer for Large-scale and Cold-start free Session-based Recommendations”, *ACM Conference on Recommender Systems (RecSys; to appear)* Late-Breaking Result, 2022.
- [C3] **Sejoon Oh**, Sungchul Kim, Ryan Rossi, and Srijan Kumar, “Influence-guided Data Augmentation for Neural Tensor Completion”, *ACM International Conference on Information and Knowledge Management (CIKM)*, Queensland, Australia, 2021.
- [C2] **Sejoon Oh**, Namyong Park, Lee Sael, and U Kang, “Scalable Tucker Factorization for Sparse Tensors - Algorithms and Discoveries”, *IEEE International Conference on Data Engineering (ICDE)*, Paris, France, 2018.
  - **Gold Prize Winner (1st in CS) from Samsung Humantech Paper Award**
  - **Best Undergraduate Thesis Award from Seoul National University**
- [C1] Namyong Park, **Sejoon Oh** and U Kang, “Fast and Scalable Distributed Boolean Tensor Factorization” , *IEEE International Conference on Data Engineering (ICDE)*, San Diego, California, USA, 2017.

## AWARDS & SCHOLARSHIPS

- **SIGIR Student Travel Award for CIKM 2021** Sept. 2021

	Funded by SIGIR to attend 2021 ACM CIKM conference	
	<ul style="list-style-type: none"> <li>▪ <b>2021 Machine Learning at Georgia Tech (ML@GT) Fellow</b> May 2021 Supports 50% of the RA salary; acceptance Ratio: 24% (6/25).</li> <li>▪ <b>Twitch Research Fellowship</b> Jan. 2021 Finalist Award - \$5K USD</li> <li>▪ <b>Student Registration Award for KDD 2020</b> Aug. 2020 Funded by both NSF and SIGKDD to attend 2020 ACM SIGKDD conference</li> <li>▪ <b>Kwanjeong Educational Foundation Fellowship</b> Aug. 2019 – Present One of the most prestigious fellowships in Korea, which supports up to \$30K USD per year</li> <li>▪ <b>Best Thesis Award (among all CSE undergraduate students)</b> Aug. 2018 Awarded by Seoul National University, Korea</li> <li>▪ <b>Humantech Paper Award (Gold Prize, 1st in Computer Science)</b> Feb. 2018 Awarded by Samsung, Korea</li> <li>▪ <b>National Scholarship for Science and Engineering</b> Dec. 2017 Awarded by Ministry of Science and ICT, Korea</li> <li>▪ <b>Silver Medalist of Asia-Pacific Informatics Olympiad</b> May 2011 Awarded at the 5th Asia-Pacific Informatics Olympiad (APIO), Iran</li> <li>▪ <b>Gold and Silver Medalist</b> July 2008 – July 2011 Awarded at Korea Olympiad in Informatics (KOI), Korea</li> <li>▪ <b>Candidate for International Olympiad in Informatics (IOI)</b> Aug. 2008 – Aug. 2010 Trained at IOI Summer and Winter School, Korea</li> </ul>	
<b>RESEARCH EXPERIENCE</b>	<p><b>Data Science Research Intern</b>, The Home Depot</p> <ul style="list-style-type: none"> <li>▪ Mentors: Dr. Xiquan Cui &amp; Dr. Amin Javari &amp; Rebecca West May 2021 – Aug. 2021</li> <li>▪ Research project: real-time intention-aware personalized recommendation</li> </ul> <p><b>Data Science Research Intern</b>, Adobe Research</p> <ul style="list-style-type: none"> <li>▪ Mentors: Dr. Sungchul Kim &amp; Dr. Ryan Rossi May 2020 – Aug. 2020</li> <li>▪ Research project: influence-based data augmentation for neural tensor completion</li> </ul> <p><b>Graduate Research Assistant</b>, Georgia Institute of Technology</p> <ul style="list-style-type: none"> <li>▪ Research area: adversarial machine learning and recommender system Aug. 2019 – Present</li> </ul> <p><b>Data Science Research Intern</b>, WATCHA, Inc.</p> <ul style="list-style-type: none"> <li>▪ Research area: dynamic recommender system with deep learning May 2019 – Aug. 2019</li> </ul> <p><b>Graduate Research Assistant</b>, Carnegie Mellon University</p> <ul style="list-style-type: none"> <li>▪ Research area: machine learning for computational biology problems Aug. 2018 – May 2019</li> </ul> <p><b>Undergraduate Research Intern</b>, Data Mining Lab., Seoul National University</p> <ul style="list-style-type: none"> <li>▪ Research area: tensor analysis, recommender system, and HPC July 2016 – May 2018</li> </ul>	
<b>PROFESSIONAL SERVICES</b>	<p><u>Journal Reviewer</u></p> <ul style="list-style-type: none"> <li>▪ European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2018; Guest Reviewer) Mar. 2018</li> </ul>	
<b>PATENTS</b>	<p><u>USA</u></p> <ul style="list-style-type: none"> <li>▪ Walid Shalaby, <b>Sejoon Oh</b>, Amir Hossein Afsharinejad, Xiquan Cui “Hierarchical Multi-Task Learning Framework for Session-based Recommendations”, Patent number: 072031.251US3 (provisional).</li> <li>▪ <b>Sejoon Oh</b>, Sungchul Kim, Ryan Rossi, “Enhancing Neural-Based Prediction of Multi-Dimensional Data via Influence and Data Augmentation”, Patent number: P1038-US/364986 (filed).</li> </ul> <p><u>KOREA</u></p> <ul style="list-style-type: none"> <li>▪ <b>Sejoon Oh</b>, Namyong Park, U Kang, “Apparatus for Supporting Multi-dimensional Data Analysis through Parallel Processing and Method for the Same”, Korean patent number: 10-2017-0158951.</li> </ul>	
<b>TEACHING</b>	<p><u>Teaching Assistant</u></p> <ul style="list-style-type: none"> <li>▪ Web Search and Text Mining (Georgia Tech - CSE 6240) Spring 2021</li> </ul>	
<b>TECHNICAL SKILLS</b>	<ul style="list-style-type: none"> <li>▪ C, Python, PyTorch, and OpenCL (Advanced)</li> <li>▪ Java, C++, and MATLAB (Experienced)</li> <li>▪ Scala, R, Tensorflow, and CUDA (Intermediate)</li> </ul>	