

Yunseok Jang

Curriculum Vitae

Beyster 3849, 2260 Hayward St., Ann Arbor, MI 48109

✉ yunseokj@umich.edu

📁 yunseokjang.github.io

📄 [yunseokjang](#)

Research Interests

Understanding visual content, particularly on short videos and animated GIFs, by exploring its spatio-temporal representation and semantic meaning in a hierarchical and compositional form.

Education

Sep. 2018 - Current **University of Michigan (UMich)**, Ann Arbor, MI.

- Ph.D. Candidate in Computer Science and Engineering, GPA: **4.0**/4.0
- Advisor: *Prof. Honglak Lee*

Mar. 2016 - Feb. 2018 **Seoul National University (SNU)**, Seoul, Korea.

- Master of Science in Computer Science and Engineering, GPA: **4.24**/4.3
- Advisor: *Prof. Gunhee Kim* (Vision and Learning Laboratory)
- Thesis: *Video-based Visual Question Answering with Spatio-Temporal Reasoning Tasks (Best Thesis Award)*
- Committee: Byoung-Tak Zhang, Gunhee Kim, U Kang

Feb. 2007 - Aug. 2015 **Korea Advanced Institute of Science and Technology (KAIST)**, Daejeon, Korea.

- Cumulative Rank: **1st** out of 231 students in August 2015, GPA: **4.19**/4.3
- Bachelor of Science in Computer Science (Major: **4.27**/4.3, Math: **4.3**/4.3)
- Minor: IT Business Administration

Aug. 2008 - May 2009 **Franklin W. Olin College of Engineering**, Needham, MA.

- Exchange Student Program, GPA: **3.72**/4.0 (Major: **3.90**/4.0)

Publications

Peer-Reviewed Conferences

- C6. Michael M. Yoder, Qinlan Shen, Alex Coda, **Yunseok Jang**, Yale Song, Kapil Thadani, Carolyn P. Rose, *Phans, Stans and Cishets: Self-Presentation Effects on Content Propagation in Tumblr*, 12th ACM Web Science Conference 2020 (**WebSci 2020**), Southampton, UK, 2020 (Acceptance = 38/140 ~ 27.1%)
- C5. **Yunseok Jang***, Tianchen Zhao*, Seunghoon Hong, Honglak Lee, *Adversarial Defense via Learning to Generate Diverse Attacks*, International Conference on Computer Vision (**ICCV 2019**), Seoul, Korea, 2019 (Acceptance = 1077/4303 ~ 25.0%)
- C4. Dingdong Yang*, Seunghoon Hong*, **Yunseok Jang**, Tianchen Zhao, Honglak Lee, *Diversity-Sensitive Conditional Generative Adversarial Networks*, International Conference on Learning Representations (**ICLR 2019**), New Orleans, Louisiana, 2019 (Acceptance = 524/1591 ~ 32.9%)

- C3. **Yunseok Jang**, Gunhee Kim, Yale Song, *Video Prediction with Appearance and Motion Conditions*, International Conference on Machine Learning (**ICML 2018**), Stockholm, Sweden, 2018 (Acceptance = 621/2473 ~ 25.1%)
- C2. Joon-Mo Park, Chul-joo Lee, **Yunseok Jang**, *Theory-driven automated content analysis of suicidal tweets : Using typicality-based classification for LDA dataset*, Annual Conference of the International Communication Association (**ICA 2018**), Prague, Czech Republic, 2018 (Acceptance = 2369/4796 ~ 49.40%)
- C1. **Yunseok Jang**, Yale Song, Youngjae Yu, Youngjin Kim, Gunhee Kim, *TGIF-QA: Toward Spatio-Temporal Reasoning in Visual Question Answering*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2017**), Honolulu, USA, 2017 (**Spotlight**) (Acceptance = 215/2680 ~ 8.0%)

Peer-Reviewed Journals

- J1. **Yunseok Jang**, Yale Song, Chris Dongjoo Kim, Youngjae Yu, Youngjin Kim, Gunhee Kim, *Video Question Answering with Spatio-Temporal Reasoning*, International Journal of Computer Vision (**IJCV**), 10.1007/s11263-019-01189-x. (SCI, IF=11.541)

Technical Reports

- T1. **Yunseok Jang**, Yale Song, Gunhee Kim, *On the Virality of Animated GIFs on Tumblr*, arXiv:2108.07894

Professional Experience

- Sep. 2018 - Current **Graduate Student Research Assistant**, *University of Michigan*, Ann Arbor, MI.
 - Advisor: *Prof. Honglak Lee*
 - Developed and implemented a new system for defending against adversarial attacks. Our paper related to this work is accepted in **ICCV 2019**.
- Jun. 2020 - Nov. 2020 **Research Intern**, *Adobe Research*, San Jose, CA.
 - Collaborator: *Ruben Villegas, Duygu Ceylan, Jimei Yang, Xin Sun*
 - Developed a method for encoding complex 3D shapes into a 2D form. Applied it to guide a 2D image generation model to consider the details of 3D objects without 3D inputs.
- Jun. 2019 - Dec. 2019 **Research Intern**, *Google*, Mountain View, CA.
 - Collaborator: *Will Lu, Lu Jiang*
 - Worked on developing a self-supervised video understanding model that understands instructional videos based on the narrations.
- Mar. 2018 - Jun. 2018 **Visiting Scholar**, *University of Michigan*, Ann Arbor, MI.
 - Advisor: *Prof. Honglak Lee*
 - Designed and implemented a new method to mitigate mode-collapse issues in generating videos. Our paper related with this work is accepted in **ICLR 2019**.
- Jun. 2017 - Nov. 2017 **Research Intern**, *Yahoo! Research*, New York, NY.
 - Manager: *Yale Song*
 - Designed and built a *Conditional Generative Adversarial Network*-based system that can generate a short but *editable* video sequence from a single static image with appropriate motion conditions. Our paper related with this work is accepted in **ICML 2018**.

- Sep. 2015 - Feb. 2018 **Graduate Research Assistant, SNU Vision and Learning Laboratory, Seoul, Korea.**
- Advisor: *Prof. Gunhee Kim*
 - Collaborator: *Yale Song* (under *Yahoo Academic Research Program*)
 - Created a new Visual Question Answering (VQA) dataset *with Animated GIFs*, focusing on repetition and transition tasks to point out the differences with image-based VQAs. Built new models to present various approaches for handling video-based VQA tasks. Our paper related with this work is accepted in **CVPR 2017** as a **spotlight**.
 - Analyzed animated GIFs, an increasingly popular content in online communication, in various way to understand what it means and why people use.
- Mar. 2015 - Jun. 2015 **Undergraduate Research Assistant, KAIST U&I Laboratory, Daejeon, Korea.**
- Advisor: *Prof. Alice Oh*
 - Built several models, including Low-rank Matrix Completion using Alternating Minimization based and Markov decision process based models, in Python for predicting registration behaviors of KAIST students. Implemented by analyzing last 10 years of records related to course registration. Submitted the predicted behavior about course registration to the KAIST academic team for better resource management.
- Sep. 2012 - Jul. 2014 **Software Engineer (iOS and Backend), KAKAO, Gyeonggi-do, Korea.**
- Modeled, programmed and managed Netty-based crowd-sourced link aggregation service, Underline. Implemented and adopted some recommender systems to curate contents in our service.
 - Programmed and managed iOS and server-side of mobile Q&A service, KakaoPoll.
 - Planned, managed, and operated 1st and 2nd in-office Hackathon known as 24K(24h for Krew).
- Jan. 2011 - Aug. 2012 **Software Engineer (Android and Windows), ESTsoft, Seoul, Korea.**
- Created Android music player application, ALSong, that supports synchronized lyrics.
 - Programmed, ALYac Premium, a licensed version of a virus-scan application for Android. Included extra functionalities for users to manage their phones more easily.
 - Programmed and managed client part of Windows application program, like Synergy, for sharing files and clipboards between two computers that are physically separated. Improved the labor efficiency among co-workers.
- Jun. 2010 - Aug. 2010 **Software Engineer Intern (Embedded System), Helsinki Metropolia University of Applied Sciences, Espoo, Finland.**
- Worked as an embedded system engineer in charge of building a new system that reduces power consumption. Changed network architecture of whole system to gain better control.
- Jul. 2009 - Dec. 2009 **Software Engineer Intern (Network System), KAKAO, Seoul, Korea.**
- Created Netflow v9 Analyzer to analyze internet traffic flow and Traffic Limit Detector to determine the associated internet cost.
 - Applied mathematical concepts with applied algorithms to predict the estimated cost, enabling the company to improve its accuracy in predicting its internet traffic and cost.

Academic Experience

- Sep. 2020 - Dec. 2020 Teaching Assistant, Deep Learning for Computer Vision (EECS 498/598), UMich
- Sep. 2019 - Dec. 2019 Teaching Assistant, Deep Learning for Computer Vision (EECS 498/598), UMich
- Mar. 2017 - Jun. 2017 Grader, Computer Vision (M1522.001000), SNU
- Mar. 2016 - Jun. 2016 Teaching Assistant, Discrete Mathematics (4190.101), SNU
- Aug. 2015 - Dec. 2015 Grader, Probabilistic Graphical Models (4190.773), SNU
- Mar. 2015 - Jun. 2015 Teaching Assistant, Introduction to Programming (CS101), KAIST
- Feb. 2013 - May 2013 Teaching Assistant, Computer Science Project (CS408), KAIST

Professional Activity

Workflow Manager	ICML Workshop (2019)
Journal Reviewer	IEEE Transactions on Pattern Analysis and Machine Intelligence
Conference Reviewer	CVPR (2019-2022), ICCV/ECCV (2019-2021), ICLR (2020-2022), ICML (2021), NeurIPS (2020-2021), AACL (2021), ICMI (2016-2018)
Workshop Reviewer	AdvMLCV (2019), LUV (2019, 2021)

Scholarships and Awards

Jul. 2018 - Current	Recipient of Kwanjeong Graduate Student Scholarship Program
Jul. 2021	Fall 2020 Outstanding Graduate Student Instructor Award in UMich CSE
Jul. 2021	ICML 2021 Best Reviewer Award
Aug. 2020	ECCV 2020 Outstanding Reviewer Award (co-listed as one of the top 12 reviewers)
Feb. 2018	Best Thesis Award in SNU CSE
Mar. 2016 - Feb. 2018	Recipient of KFAS Graduate Student Scholarship Program
Feb. 2016	Preparatory Association Award for the highest GPA in KAIST
Jun. 2008 - Aug. 2015	Recipient of Fulbright & General Electric Foundation Scholar Leaders Program

Leadership Roles and Activities

Dec. 2012, Mar. 2013,	Organizer of Experience-Sharing Events for CS Candidates
Aug. 2018	(http://bit.ly/121208_kaistcs , http://bit.ly/130323_kaistcs , http://bit.ly/180718_snuml)
Feb. 2010 - Aug. 2015	Member of KAIST Mobile Application Development Group (Team Include)
Feb. 2007 - Jun. 2008	Member of the Undergraduate Students' Association in KAIST
Dec. 2002 - May 2005	Magician (Division: Stage and Manipulation)

Skills

Computer

Deep Learning Libraries: PyTorch, TensorFlow, Theano, Caffe
Database-related Systems: Apache Pig/Hive, Redis, MariaDB, MySQL
Server-Side Development (Distributed System Design, System Engineering)
Programming Languages: JAVA, Python, C/C++, Ruby (Jekyll), Scala
Mobile Application Development (iOS, Android), Applied Algorithms

Languages

Korean (Native), English (Fluent), Chinese (Basic)