JEAN Y. SONG (송진영)

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Position
Research Assistant Professor, School of Computing
KAIST, Republic of Korea, Jan 2020 -

Education
Ph.D., Electrical Engineering and Computer Science
University of Michigan, Ann Arbor, 2019
Thesis: "Eliciting and Leveraging Input Diversity in Crowd-Powered Intelligent Systems"
M.S., Electrical and Electronic Engineering
Yonsei University, Republic of Korea, 2011
B.S., Electrical and Electronic Engineering (Minor, Psychology)
Yonsei University, Republic of Korea, 2009

Research Interests
Artificial Intelligence and Machine Learning, Human-AI interaction, Human Computation and Crowdsourcing, Computer Supported Cooperative Work and Social Computing

Honors & Awards
ACM AAMAS 2020, Pragnesh Jay Modi Best Student Paper Award, 2020
ACM CSCW 2019, Best Paper Honorable Mention Award, 2019
ACM IUI 2018, Best Student Paper Honorable Mention Award, 2018

Grants (PI only)
"Efficient Imitation Learning for Autonomous Vehicles via Crowdsourcing High-Risk Examples," the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT, Republic of Korea (2020R1I1A1A0107238511), 06/01/2020 – 05/31/2023.

Publications

Refereed Journal and Conference Papers

Jean Y. Song, John Joon Young Chung, David F. Fouhey, and Walter S. Lasecki. "C-Reference: Improving 2D to 3D Object Pose Estimation Accuracy via Crowdsourced Joint Object Estimation". *In Proceedings of the ACM International Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2020).*

Divya Ramesh, Anthony Z. Liu, Andres J. Echeverria, **Jean Y. Song**, Nicholas R. Waytowich, and Walter S. Lasecki. "Yesterday's Reward is Today's Punishment: Contrast Effects in Human Feedback to Reinforcement Learning Agents". *In Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2020).* *Pragnesh Jay Modi Best Student Paper Award*

Yan Chen, Maulishree Pandey, **Jean Y. Song**, Walter S. Lasecki, and Steve Oney. "Improving Crowd-Supported GUI Testing with Structural Guidance". *In Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2020).*

John Joon Young Chung, **Jean Y. Song**, Sindhu Kutty, Sungsoo Hong, Juho Kim, and Walter S. Lasecki. "Efficient Elicitation Approaches to Estimate Collective Crowd Answers". *In Proceedings of the ACM International Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2019). Best Paper Honorable Mention Award*

Jean Y. Song, Raymond Fok, Juho Kim, and Walter S. Lasecki. "FourEyes: Leveraging Tool Diversity as a Means to Improve Aggregate Accuracy in Crowdsourcing". *In ACM Transactions on Interactive Intelligent Systems, Volume 19, Issue 1, No. 3 (TiiS 2019) [indexed by SCI]*

Jean Y. Song, Stephan J. Lemmer, Michael X. Liu, Shiyan Yan, Juho Kim, Jason J. Corso, and Walter S. Lasecki. "Popup: Reconstructing 3D Video Using Particle Filtering to Aggregate Crowd Responses". *In Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2019) [25% Acceptance Rate]*

Jean Y. Song, Raymond Fok, Alan Lundgard, Fan Yang, Juho Kim, and Walter S. Lasecki. "Two Tools are Better Than One: Tool Diversity as a Means of Improving Aggregate Crowd Performance". *In Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2018) [23% Acceptance Rate] Best Student Paper Honorable Mention Award*

Poster and Workshop Papers

Andrew M. Vernier, **Jean Y. Song**, Edward Sun, Allison Kench, and Walter S. Lasecki. "Towards Universal Evaluation of Image Annotation Interfaces". *In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2019).*

Jean Y. Song, Minsuk Chang, Arti Thakur, Manav Rao, and Juho Kim. "Interactive Clustering of Large-Scale Images with a Human-Machine Hybrid Workflow". *Korea Software Congress (KSC 2018).*

Jean Y. Song, Raymond Fok, Fan Yang, Kyle Wang, Alan Lundgard, and Walter S. Lasecki. "Tool Diversity as a Means of Improving Aggregate Crowd Performance on Image Segmentation Tasks". *Workshop on Human Computation for Image and Video Analysis, at the AAAI Conference on Human Computation and Crowdsourcing (HCOMP 2017).*

Sai R. Gouravajhala, **Jean Y. Song**, Jinyeong Yim, Raymond Fok, Yanda Huang, Fan Yang, Kyle Wang, Yilei An, and Walter S. Lasecki. "Towards Hybrid Intelligence for Robotics". *In*

Collective Intelligence Conference (CI 2017).

Jean Y. Song and Charles R. Meyer. "2D-3D Image Registration using Thin-Plate Spline and Volume Rendering". SPIE *Medical Imaging 2015.*

Jean Y. Song, Jeffrey A. Fessler, and Charles R. Meyer. "Adaptive Filtering on Conditional Mutual Information for Intermodal Non-Rigid Image Registration". *IEEE NSS/MIC 2014.*

Jean Y. Song, Honglin Jin, and Yoonsik Choe. "Image Tamper Detection Method Based on Data Hiding". *Conference on Image Processing and Image Understanding (IPIU 2010).*

Jean Y. Song, Honglin Jin, and Yoonsik Choe. "Hash Value Delay Hiding for Image Authentication", *EURO-SIAM 2010.*

Thesis

Jean Y. Song. "Eliciting and Leveraging Input Diversity in Crowd-Powered Intelligent Systems". *University of Michigan Ph.D. Thesis. 2019.*
Jean Y. Song. "Fine Localized Image Tamper Detection based on Reversible Data Hiding and Chaotic Logistic Map". *Yonsei University Master's Thesis. 2011.*

Patents

Jean Y. Song, Stephan J. Lemmer, Jason J. Corso, and Walter S. Lasecki. "Reconstructing 3D Video Using Particle Filtering To Aggregate Crowd Responses." *U.S. Patent Application 16/704,529, filed June 25, 2020.*

Juho Kim, John Joon Young Chung, **Jean Y. Song**, Arti Thakur, "컴퓨터와 크라우드 소싱을 이용한 비디오 사전 처리 방법(Video labelling method by using computer and crowd-sourcing)". 특허출원번호 1020180048667, 출원일 2018.04.26, 공개일 2019.11.22.

Experiences   ### Teaching experience

Instructor
CS492: Human-AI Interaction
- KAIST, Republic of Korea, Fall 2020
CS101: Introduction to Programming
- KAIST, Republic of Korea, Fall 2020
CS101: Introduction to Programming
- KAIST, Republic of Korea, Winter 2020

Teaching Assistant

Yonsei University, Republic of Korea, Winter 2009

- *EEE2060: Signal and System (Lecturer: Prof. Yoonsik Choe)*

Research Experience

Graduate Student Research Assistant

Crowds and Machines (CROMA) Lab, EECS, Univ. of Michigan, Winter 2017 - Fall 2019

- *Building crowdsourcing systems for human-machine hybrid intelligent vision*

Graduate Student Research Assistant

Digital Image Processing Lab, Dep. of Radiology, Univ. of Michigan, Fall 2012 - Winter 2015

- *2D/3D non-rigid image registration of microscopy & colonoscopy images*
- *Feature classification for normal & cancerous tissue segmentation of colonic cancer*

Graduate Researcher

Image and Information Lab (IILAB), EE, Yonsei University, Fall 2009 - Winter 2011

- *Reducing bit-rate of video codec of Next-generation Digital TV Broadcasting System*
- *Reducing the decoder complexity of High Efficient Video Coding (HEVC) Standard*
- *Fine detection of tampered area of an image using watermarking*

Academic Services

Organizing Committee

- CSCW 2020 (Video Presentation Co-Chairs)
- HCI@Korea 2020 Workshop on How to Write a CHI Paper

Program Committee

- CSCW 2020
- CSCW 2021

Reviewer

- CHI 2019
- CSCW 2019, 2020
- WWW 2020
- MobileHCI 2020

References

Juho Kim

- Associate Professor, KAIST
- juhokim@kaist.ac.kr

Walter S. Lasecki

- Assistant Professor, University of Michigan
- wlasecki@umich.edu

Jason J. Corso

- Professor, University of Michigan
- jjcorso@eecs.umich.edu

Sang Won Lee

- Assistant Professor, Virginia Tech
- sangwonlee@vt.edu