

JAESAEONG LEE

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EDUCATION

University of Texas at Dallas, Richardson TX

Aug 2021 - Present

Pursuing Ph.D. in Computer Science. Supervisors: Dr. Wei Yang and Dr. Shiyi Wei

University of Texas, Austin TX

Aug 2014 - May 2017

M.S. in Electrical Engineering. Supervisors: Dr. Alan Bovik and Dr. Milos Gligoric

University of Texas at Dallas, Richardson TX

Aug 2011 - May 2012

B.S. in Electrical Engineering. Supervisor: Dr. Roozbeh Jafari

PUBLICATIONS

- **Jaeseong Lee**, Simin Chen, Austin Mordahl, Cong Liu, Wei Yang and Shiyi Wei. Automated Testing Linguistic Capabilities of NLP Models. ACM Transactions on Software Engineering and Methodology, Under Review.
- **Jaeseong Lee**, Pengyu Nie, Junyi Jessie Li, and Milos Gligoric. On the naturalness of hardware descriptions. In Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020). pp. 530–542, 2020.
- Sungsoo Kim, Jin Soo Park, Christos Bampis, **Jaeseong Lee**, Mia Markey, Alexandros Dimakis, Alan Bovik. Adversarial Video Compression Guided by Soft Edge Detection. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2020). pp. 2193-2197, 2020.
- Nimish Kale, **Jaeseong Lee**, Reza Lotfian, and Roozbeh Jafari. Impact of sensor misplacement on dynamic time warping based human activity recognition using wearable computers. In Proceedings of the conference on Wireless Health (WH '12). Article 7, pp. 1–8, 2012.

RESEARCH EXPERIENCE

Software Engineering Group

Aug 2021 - Present

Graduate Research Assistant. Supervisor: Dr. Wei Yang and Dr. Shiyi Wei

Richardson, TX

- Developing an automated mutation-based framework to assess the arithmetic reasoning proficiency of Large Language Models.
- Developed a toolchain, ALiCT, the first automated tool that generates test cases according to linguistic capabilities in multiple NLP applications (e.g. sentiment analysis and hate speech detection).
- Estimating the impact of unsuccessful test cases to determine probabilistic error associations among the test cases.

Software Engineering Group

Aug 2018 - May 2021

Graduate Research Assistant. Supervisor: Dr. Milos Gligoric

Austin, TX

- Analyzed naturalness of hardware description languages and developed an automated code completion model for the hardware description languages.
- Developed machine learning-based software engineering tools including code summarization and code completion.

Laboratory for Image and Video Engineering (LIVE Lab)

Nov 2015 - Dec 2016

Graduate Research Assistant. Supervisor: Dr. Alan Bovik

Austin, TX

- Developed a learning-based video scene encoding and decoding scheme using GAN-based adversarial autoencoder.
- Analyzed video BLIINDS, a video quality assessment algorithm, for developing a video archiving system.

INDUSTRIAL EXPERIENCE

FaradayFuture

May 2017 - Aug 2017

Algorithm Development Engineer intern, Advanced Driver Assistant System

Los Angeles, CA

- Participated and developed multi-sensor (Camera, Lidar, Radar and USS) based object detection algorithms.
- Built algorithm module testing framework for autonomous parking system.

Spirent Communications

June 2016 - Aug 2016

Engineering intern

Frederick, MD

- Tested PEVQ VQA algorithm for usage of chromatic software for video experience evaluation.
- Implemented VMAF video quality assessment algorithm into the chromatic video experience evaluation software.

TECHNICAL SKILLS

Computer Languages	Python, Java, Javascript, C++, C#, Bash
Tools	Git, Pytorch, Tensorflow, Huggingface Transformer, SpaCy, Antlr, React, WALA, Soot
Protocols & APIs	XML, JSON, Github API, ChatGPT API
Databases	MySQL, MongoDB, Hadoop, Spark, PySpark

TEACHING EXPERIENCE

Teaching Assistant (TA), University of Texas at Dallas, Richardson TX

· Operating Systems (CS 4348)	<i>Jan 2023 - May 2023</i>
· Software Architecture and Design (SE4352)	<i>Aug 2022 - Dec 2022</i>
· Compiler Design (CS4386)	<i>Aug 2021 - Dec 2021</i>

Teaching Assistant (TA), University of Texas at Austin, Austin TX

· Introduction of Engineering Design (EE364D)	<i>Aug 2020 - Dec 2020</i>
· Engineering Dynamic Programming Analysis (EE397K)	<i>Aug 2019 - Dec 2019</i>
· Senior Project Design (EE464)	<i>Jan 2019 - May 2019</i>
· Data Analysis for Health Science (SDS302)	<i>Jan 2018 - May 2018</i>
· Human-Robot Interaction (EE382D)	<i>Aug 2017 - Dec 2017</i>
· Introduction of Engineering Design (EE465D)	<i>Aug 2014 - Dec 2014</i>