KEATON KRAIGER

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EDUCATION

PhD in Computer Science Engineering   Jan. 2021 - Present
Pennsylvania State University: University Park

BS in Computer Science   Sep. 2016 - June 2020
Portland State University
- Overall GPA: 3.80/4.00
- Honors (*Magna Cum Laude*)

RESEARCH INTERESTS

I am broadly interested in machine learning and its applications in computer vision, graphics, and reinforcement learning. My work primarily focuses on self-supervised, multimodal learning in the video and image domain. My current research involves learning dynamics from human pose and zero-shot repetition and recurrence detection in videos and images.

RESEARCH EXPERIENCE

Research Assistant, Laboratory for Perception, Action, and Cognition (LPAC) Jan. 2021 - Jan. 2022
Dr. Yanxi Liu, Pennsylvania State University
- Conduct research on multimodal action recognition utilizing video, motion capture, and foot pressure information
- Investigate learned representations from synthetic data and their applications in downstream vision tasks
- Detecting object and action-agnostic repetitions in video

Research Assistant, Biologically-Inspired Computing Lab (BICL)   Dec. 2018 - Jan. 2020
Dr. Dan Hammerstrom, Portland State University
- Develop biologically-inspired algorithms to perform object detection
- Explore grid cell functionality in capturing object structure while maintaining position and scale invariance
- Process image datasets with grid cell model to aid in object detection and image classification
- Compare different image classifier performances, specifically convolutional neural networks and capsule networks when integrated with the grid cell model

Undergraduate Mentee, Undergraduate Research & Mentoring Program   Nov. 2018 - May 2019
Fariborz Maseeh College of Engineering and Computer Science, Portland State University
- Paired with faculty mentor to conduct funded research during the winter and spring term
- Attended program workshops on developing abstracts, research proposals, research questions, research methods, and means of communicating research findings

- Gained a foundation of computer science research by reviewing scholarly articles and relevant work being conducted

PRESENTATIONS

K. Kraiger & D. Hammerstrom. "The Applications of Grid Cells in Computer Vision," presented at Portland State University Student Research Symposium, Portland, Oregon, 2019

K. Kraiger & D. Hammerstrom. "The Applications of Grid Cells in Computer Vision," presented at Portland State University Undergraduate Research and Mentoring Program Research Presentation, Portland, Oregon, 2019

WORK EXPERIENCE

Computer Vision II Teaching Assistant   Jan. 2022 - May 2022
Huijuan Xu, Pennsylvania State University
- Created course homework and programming assignments from scratch. Assignments covered a broad range of vision techniques and state-of-the-art network designs
- Held weekly office hours and created additional course supplemental learning material.

Technical Course Student Specialist   June 2019 - June 2020
Karla Fant, Portland State University
- Work with undergraduate computer science students during weekly homework recitation sessions on programming assignments and algorithm development
- Help facilitate Introduction to Computer Science weekly labs
- Assist instructor during end of the term proficiency demonstrations

Course Grader   Sep. 2017 - June 2020
Karla Fant, Portland State University
- Provide timely feedback and grades on students' programming and algorithm assignments

REFERENCES

Yanxi Liu, PhD
- Professor, Pennsylvania State University
- Department of Computer Science and Engineering and Electrical Engineering
- yul11@psu.edu

Huijuan Xu, PhD
- Professor, Portland State University
- Department of Computer Science and Engineering
- hkx5063@psu.edu

Dan Hammerstrom, PhD
- Professor Emeritus, Portland State University

- Department of Electrical and Computer Engineering
- Dwh@pdx.edu