YIHONG SUN

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EDUCATION

Cornell University, Ithaca, NY 2022–Present
- Ph.D. Student in Computer Science

Johns Hopkins University, Baltimore, MD 2018–2022
- B.S. in Computer Science, Cognitive Science, Neuroscience, and Applied Mathematics and Statistics
- Advisor: Prof. Alan Yuille
- Cumulative GPA: 4.00 / 4.00

PUBLICATIONS

[1] Amodal Segmentation through Out-of-Task and Out-of-Distribution Generalization with a Bayesian Model
Yihong Sun, Adam Kortylewski, Alan Yuille
Conference on Computer Vision and Pattern Recognition (CVPR), 2022

[2] Robust Instance Segmentation through Reasoning about Multi-Object Occlusion
Xiaoding Yuan, Adam Kortylewski, **Yihong Sun**, Alan Yuille
Conference on Computer Vision and Pattern Recognition (CVPR), 2021

[3] Robust Object Detection Under Occlusion With Context-Aware CompositionalNets
Angtian Wang*, **Yihong Sun***, Adam Kortylewski, Alan Yuille
Conference on Computer Vision and Pattern Recognition (CVPR), 2020
(*equal contribution)

[4] Compositional Convolutional Neural Networks: A Robust and Interpretable Model for Object Recognition under Occlusion
Adam Kortylewski, Qing Liu, Angtian Wang, **Yihong Sun**, Alan Yuille
International Journal of Computer Vision (IJCV), 2020

EXPERIENCES

Computational Cognitive Science Group @ MIT, Research Intern 2021–2022
- Supervised by Dr. Josh Tenenbaum to model intuitive physics learning via visual stimulus.
- Project: Implemented Generalizable Dynamical Physics Estimator learned from single-view RGBD video sequences through reconstructing 3D objects modeled by Object-Centric Neural Radiance Fields.

CCVL Group @ JHU, Research Intern 2019–2022
- Supervised by Dr. Alan Yuille to develop computer vision systems via interdisciplinary integration with human vision.
- Project 1: Implemented Context-Aware CompositionalNets for object detection under partial occlusions and regulated bias to contextual cues through context separation.
- Project 2: Extended Context-Aware CompositionalNets to perform weakly supervised instance amodal segmentation by exploiting spatial compositional priors.
- Project 3: Implemented Multi-Object Occlusion Reasoning by leveraging weakly supervised instance amodal segmentation.

UCI Cancer Research Institute, Research Fellow 2017–2018

- Created the Micropallet Array Image Processing Project in association with UCI Cancer Research Institute Nelson Laboratory.
- Project: Enhancing the advantages of the Micropallet Array Application via automating efficient analysis of radioactive marked cancer cell membrane expressions across multiple channels and cell lines.

TEACHINGS

Course Assistant for JHU Department of Computer Science

- EN.601.783 Vision as Bayesian Inference Spring 2022
- AS.050.375 Probabilistic Models of the Visual Cortex Fall 2021
- EN.601.226 Data Structures Spring 2021
- AS.050.375 Probabilistic Models of the Visual Cortex Fall 2020
- EN.601.226 Data Structures Fall 2020
- EN.601.226 Data Structures Spring 2020

AWARDS & ACHIEVEMENTS

JHU CS Outstanding Senior Award 2022

- 2 out of 269 students acknowledged by the Department of Computer Science.

JHU Dean's List 2018-2022

- Received Dean's List for every letter-grading semester.

International Medicine Olympiad Silver Medal 2017

- Performed within top 50 students in International Medicine Olympiad.

USA Biology Olympiad Semi-Finalist 2017

- Scored within top 500 students in USA Biology Olympiad Open Exam.

SERVICE & OUTREACH

JHU Honor Society

- Member of Upsilon Pi Epsilon, the national honor society in Computer Science. 2020 – 2022
- Member of Nu Rho Psi, the national honor society in Neuroscience. 2018 – 2020

SKILLS

Programming Languages

- Python, Java, C/C++, MATLAB, R

Machine Learning Frameworks

- PyTorch, Tensorflow, NumPy, scikit-learn

Others

- OpenCV, Bash, LaTeX, Linux