YIYOU SUN

Website: https://sunyiyou.github.io • Cell: (+1) 617-306-9296 • Email: sunyiyou@cs.wisc.edu

Education

University of Wisconsin-Madison Sept. 2018 - Current
PhD. Student in Computer Science, Minor in Math *Madison, US*

- GPA 4.0/4.0
- Supervised by Prof. Vikas Singh.

Harbin Institute of Technology Sept. 2014 - Jun. 2018
B.S. in Computer Science *Harbin, China*

- GPA 93.67/100, Rank **1st** among 97 students.

Research Interest

Special

- **Interpretability**: Builds interpretable machine learning system, particularly in visualizing and quantitating model's inference mechanism or even constructing one inherently sparse, simulatable, modular and thus, interpretable.

Broad

- **Image-Text Embedding**: Includes captioning, textual grounding, simple visual question answering, etc.
- **Neural Inference**: Designs nerual-structured programs to support inductive learning and logic reasoning.
- **Multi-task Learning**: Focuses on overcoming catastrophy fogetting and knowledge transferring problem.

Research Experience

MIT: Computer Science and Artificial Intelligence Laboratory Dec 2017 - May 2018
Collaborator *Cambridge, MA*

- Supervised by Prof. Bolei Zhou(now in CUHK).
- Decomposed the neural activations of the input image into semantically interpretable components pre-trained from a large concept corpus. [2,3]

Harvard University: DASlab July 2017 - May 2018
Research Assisstant *Cambridge, MA*

- Supervised by Prof. Stratos Idreos.
- Focused on computing the optimal data structure by *deep reinforcement learning algorithm.* [5,6]

Publications

[1] **Y. Sun**, S.Ravi, V. Singh. "*Dynamic-K Activation: Adaptive Routing for Sparse and Interpretable Neural Connection.*" International Conference on Computer Vision (ICCV), 2019.

[2] B. Zhou*, **Y. Sun***, D.Bau*, A. Torralba. "*Interpretable Basis Decomposition for Visual Explanation.*" European Conference on Computer Vision (ECCV), 2018. (* indicates equal contribution)

[3] B. Zhou, **Y. Sun**, D.Bau, A. Torralba. "*Revisiting the Importance of Individual Units in CNNs via Ablation*". arXiv preprint arXiv:1806.02891, 2018.

[4] **Y. Sun**, T. Su, and Z. Tu. "*Faster R-CNN Based Autonomous Navigation for Vehicles in Warehouse*". In 2017 IEEE International Conference on Advanced Intelligent Mechatronics (AIM), pages 1639-1644, July 2017.

[5] S. Idreos, K. Zoumpatianos, M. Athanassoulis, N. Dayan, B. Hentschel, M. S. Kester, D. Guo, L. M. Maas, W. Qin, A. Wasay, and **Y. Sun**. "*The Periodic Table of Data Structures*". IEEE Data Eng. Bull., 41(3):64-75, 2018.

[6] S. Idreos, K. Zoumpatianos, S. Chatterjee, W. Qin, A. Wasay, B. Hentschel, M. Kester, N. Dayan, D. Guo, M. Kang, **Y. Sun** "*Learning Data Structure Alchemy*". Bull. of the IEEE Computer Society Technical Committee on Data Engineering. 42(2), 2019.