

# Aaron Sun

COMPUTER SCIENCE PHD STUDENT  
Amherst, Massachusetts

☎ (408) 941-5106 | ✉ aaronsun@umass.edu | 📧 aaronsun1030 | 🌐 aaronsun1030 | 🎓 Aaron Sun

## Summary

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PhD student at UMass Amherst studying Computer Vision, particularly semi-supervised learning with missing or weak labels in classification tasks for fine-grained domains.

## Education

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### University of Massachusetts, Amherst

MS/PHD IN COMPUTER SCIENCE

- Expected graduation date: May 2027

*Amherst, Massachusetts*

*Sept. 2022 - Present*

### University of California, Berkeley

B.A. IN COMPUTER SCIENCE, APPLIED MATHEMATICS, PHYSICS

- GPA: 3.95

*Berkeley, California*

*Aug. 2018 - May 2022*

## Papers

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### Benchmarking Single-Positive Multi-Label Methods using the L48S Dataset

FIRST AUTHOR

- We introduce the L48 Spectrogram dataset, a fine-grained, real-world benchmark for SPML learning.
- We show existing SPML methods suffer from misclassifications and propose a new regularization method.

*CVPR 2025*

*Pending Submission*

### Task2Box: Box Embeddings for Modeling Asymmetric Task Relationships

SECOND AUTHOR

- We present a method of task representation using box embeddings and demonstrate how they are able to capture asymmetric relationships between tasks and generalize to unseen tasks.

*CVPR 2024*

*Website Link*

### COSE: A Consistency-Sensitivity Metric for Saliency on Image Classification

CO-FIRST AUTHOR

- We present a set of metrics that effectively assess performance of saliency methods on image classification.

*ICCV 2023*

*Website Link*

### ZeoNet: 3D convolutional neural networks for predicting adsorption in nanoporous zeolites

FOURTH AUTHOR

- We present a representation learning framework using CNNs and 3D volumetric representations for predicting adsorption in zeolites.

*Journal of Materials*

*Chemistry 2023*

*Paper Link*

## Work Experience

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### Advanced Bioimaging Center

RESEARCH ASSISTANT

- Implementing computer vision to generate cellular features from fluorescence microscope images.
- Refining existing single particle tracking algorithms used for tracking individual molecules three dimensions.

*Berkeley, California*

*May 2019 - May 2022*

### Amazon

SOFTWARE DEVELOPMENT ENGINEER INTERN

- Designing and implementing the Tag Dictionary, an internal tool used to organize and add arbitrary labels to data.

*Sunnyvale, California*

*May 2022 - August 2022*