Sasha Sax

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alexsax.github.io

Education

Ph.D. Electrical Engineering and Computer Science — 2023 (expected)
University of California, Berkeley; Berkeley, CA — *Advisors:* Jitendra Malik & Amir Zamir

M.S. Computer Science [*Distinction in Research, GPA 4.0+*] — 2018
Stanford University; Stanford, CA — Advisor: Silvio Savarese

B.S. Mathematics [*GPA maj. 3.8*] — 2018
Stanford University; Stanford, CA

Miscellaneous: AMS Math in Moscow *(Independent University of Moscow/HSE)*, Sensory Ecology *(Lund University, Sweden)*, Concurrent enrollment *(University of Maryland 2011-12)*

Awards

Best Paper Award Nomination, CVPR — 2020
Robust Learning Through Cross-Task Con sistency

Best Paper Award, CVPR — 2018
Taskonomy: Disentangling Task Transfer Learning

NVIDIA Pioneering Research Award — 2018
Embodied Real-World Active Perception

NVIDIA Graduate Fellowship (Honorable Mention) — 2021-2022
Mid-Level Representations for Robotic Perception

Stanford University Distinction in Research — 2018
Computational Evidence for Structure in the Space of Tasks

Winner of CVPR 2019 Habitat Embodied Agents Challenge [RGB Track] — 2019
Mid-Level Visual Representations Improve Generalization and Sample Complexity

Outstanding Reviewer, CVPR 2020 — 2020

Recent Experience

FAIR, Research Intern; San Francisco, CA — 2022-2023
Multi-view and equivariant representations.

FAIR, Research Intern; Menlo Park, CA — 2017-2018
Mid-level visual representations for indoor navigation.

Stanford University, Research Assistant; Stanford, CA — 2016-2017
Visual task relatedness (Taskonomy), Gibson environment. (Silvio Savarese group)

Teaching

Machine Learning (TA)*: Berkeley CS 189/289A* — 2020
Representation Learning (Head TA)*: Stanford CS 331B* — 2018
Mathematical Foundations of Computing (TA)*: Stanford CS 103* — 2015

Selected Papers

Taskonomy: Disentangling Task Transfer Learning **[Best Paper Award]**
Amir Zamir, Alexander Sax*, William B. Shen*, Leonidas Guibas, Jitendra Malik, Silvio Savarese. CVPR, 2018.

Mid-Level Visual Representations Improve Generalization and Sample Efficiency for Learning Visuomotor Policies

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Alexander Sax, Jeffrey O. Zhang, Bradley Emi, Amir Zamir, Leonidas Guibas, Silvio Savarese Jitendra Malik. *CoRL*, 2019. *BayLearn*, 2019.

Omnidata: A Scalable Pipeline for Multi-Task Mid-Level Vision Datasets from 3D Scans
Ainaz Eftekhar*, Alexander Sax*, Roman Bachmann, Jitendra Malik, Amir Zamir. ICCV, 2021.

Robust Learning Through Cross-Task Consistency **[Best Paper Award Nominee, Oral]**
Amir Zamir*, Alexander Sax*, Teresa Yeo, Oguzhan Fatih Kar, Nikhil Cheerla, Rohan Suri, Zhangjie Cao, Jitendra Malik, Leonidas Guibas. CVPR, 2020.

Gibson Env: Real-World Perception for Embodied Agents **[Spotlight]**
Fei Xia*, Zhiyang He*, Amir Zamir*, Alexander Sax, Silvio Savarese. CVPR, 2018.

Invited Talks

Learning-Based Computational Models of Visual Behavior (Poster), Lund, SE — Sep-Oct 2022
This sensory ecology seminar was simply delightful—more embodied AI people should go!! You need to **apply early!** It's a 2-week lecture series for 40 PhD/postdocs, taught by the world's leading sensory ecologists every 2 years. And you will learn how animals sense and represent their environment, and that the line between sensing and thinking is a blurry one.

Mid-Level Visual Representations, CS 280 (guest lecture), Berkeley, CA — 2021

Visual Biases in Embodied Agents, Facebook AI Research, Menlo Park, CA — Apr. 2019

Service

Graduate Mentor: BAIR Undergraduate Mentoring — 2019-Present
Reviewer: (CVPR ECCV ICCV ICRA CoRL NeurIPS ICML TPAMI …) — 2018-Present
Graduate Admissions: Student Committee — 2019, 2021
Student Organizer: 3DV Conference — 2016
Junior Class President: Stanford Class of 2016 — 2014-2015
K-5 Math Tutor: East Palo Alto Tutoring and Tennis — 2013-2014

Demos

Robust Cross-Task Consistency, ECCV 2020, Glasgow. — 2020

Older Experience

Microsoft Corporation, Mountain View, CA — Software Engineering Intern, 2016
Powerpoint Designer: improved response time through parallelization (C#), and prototyped a logo detector, one of the first internal ML elements in Designer (TF ResNet backbone).

Stanford University, Stanford, CA — Research Assistant, 2015
Fast square-finding in graphs and fast finding of low-cost replacement paths in present of edge failures (Virginia Williams group)

RTI International, Washington, DC — Software Engineering Intern, 2014
Created STATA package to automate statistical analysis and survey ingestion for Early Grade Reading + Math (EGRMA) evaluations in developing countries. Correctly handles reweighing + variance adjustments for multi-level stratified cluster samples. Later used by government orgs in Kenya, Ghana, and Zambia.

Blackboard Inc., San Francisco, CA — Software Engineering Intern, 2013

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Created an early-warning analytics system to monitor app API traffic, health metrics in real-time. The system used NodeJS, MongoDB, and Hadoop.

RTI International, Washington, DC — Software Engineering Intern, 2010-2012

Using STATA, developed an automated data-cleaning process that reduced turnaround from 2 months to 1 week and freed PhD statisticians to work on other problems.

Publications

[10] *Omnidata: A Scalable Pipeline for Multi-Task Mid-Level Vision Datasets from 3D Scans*
Ainaz Eftekhar*, Alexander Sax*, Roman Bachmann, Jitendra Malik, Amir Zamir. ICCV, 2021.

[9] *Robustness via Cross-Domain Ensembles* **[Oral]**
Teresa Yeo*, Oğuzhan Fatih Kar*, Alexander Sax, Amir Zamir. ICCV 2021.

[8] *Robust Policies via Mid-Level Visual Representations: An experimental study in navigation and manipulation*
Bryan Chen*, Alexander Sax*, Francis E. Lewis, Silvio Savarese, Jitendra Malik, Amir Zamir, Lerrel Pinto. CoRL, 2020.

[7] *Robust Learning Through Cross-Task Consistency* **[Best Paper Award Nominee, Oral]**
Amir Zamir*, Alexander Sax*, Teresa Yeo, Oguzhan Fatih Kar, Nikhil Cheerla, Rohan Suri, Zhangjie Cao, Jitendra Malik, Leonidas Guibas. CVPR, 2020.

[6] *Side-Tuning: A Baseline for Network Adaptation via Additive Side Networks* **[Spotlight]**
Jeffrey O. Zhang, Alexander Sax, Amir Zamir, Leonidas Guibas, Jitendra Malik. *ECCV*, 2020.

[5] *Learning to Navigate via Mid-Level Visual Priors*
Alexander Sax, Jeffrey O. Zhang, Bradley Emi, Amir Zamir, Leonidas Guibas, Silvio Savarese Jitendra Malik. *CoRL*, 2019.

[4] *Mid-Level Visual Representations Improve Generalization and Sample Efficiency for Learning Visuomotor Policies* **[Oral]**
Alexander Sax, Jeffrey O. Zhang, Bradley Emi, Amir Zamir, Leonidas Guibas, Silvio Savarese Jitendra Malik. *Arxiv* 2018. *BayLearn*, 2019. (Oral)

[3] *Taskonomy: Disentangling Task Transfer Learning* **[Best Paper Award, Oral]**
Amir Zamir, Alexander Sax*, William B. Shen*, Leonidas Guibas, Jitendra Malik, Silvio Savarese. *CVPR*, 2018.

[2] *Embodied Real-World Active Perception* **[Spotlight]**
Fei Xia*, Zhiyang He*, Amir Zamir*, Alexander Sax, Silvio Savarese. *CVPR*, 2018. (Spotlight)

[1] *Joint 2D-3D-Semantic Data for Indoor Scene Understanding*
Iro Armeni*, Alexander Sax*, Amir Zamir*, Silvio Savarese. *Arxiv (preprint)*, 2016.