

# Eadom Dessalene — *PhD Candidate*

University of Maryland, College Park, MD  
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## Education

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University of Maryland

Ph.D. in Computer Science

Proposal: *Embodied Action Understanding*

Member of the Perception and Robotics (PRG) Lab

*College Park, MD*

Fall 2019 - Current

George Mason University

B.S. in Computer Science & Mathematics

*Fairfax, VA*

Fall 2018

## Selected Publications

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- **Eadom Dessalene**, Botao He, Michael Maynard, Yonatan Tussa, Pavan Mantripragada, Yianni Karabati, Nirupam Roy, Yiannis Aloimonos. **FEEL (Force-Enhanced Egocentric Learning): A Dataset for Physical Action Understanding**. *Under review at ECCV 2026*.
- **Eadom Dessalene**, Pavan Mantripragada, Michael Maynard, Yiannis Aloimonos. **EmbodiSwap for Zero-Shot Robot Imitation Learning**. *Under review at IROS 2026*.
- **Eadom Dessalene**, Michael Maynard, Cornelia Fermüller, Yiannis Aloimonos. **Context in Human Action through Motion Complementarity**. *WACV 2024*.
- **Eadom Dessalene**, Michael Maynard, Cornelia Fermüller, Yiannis Aloimonos. **LEAP: LLM-Generation of Egocentric Action Programs**. *arXiv 2023*.
- **Eadom Dessalene**, Michael Maynard, Cornelia Fermüller, Yiannis Aloimonos. **Therbligs in Action: Video Understanding Through Motion Primitives**. *CVPR 2023*.
- Michael Maynard, **Eadom Dessalene**, Cornelia Fermüller, Yiannis Aloimonos. **Mid-Vision Feedback**. *ICLR 2023*.
- **Eadom Dessalene**, Chinmaya Devaraj, Michael Maynard, Cornelia Fermüller, Yiannis Aloimonos. **Forecasting Action through Contact Representations from First Person Video**. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2021.
- **Eadom Dessalene**, Yi Heng Ong, John Morrow, Ravi Balasubramanian, Cindy Grimm **Using Geometric Features for Near-Contact Representation in Robotic Grasping**. *ICRA 2019*.

## Talks

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Embodied Action Understanding

*NASA JPL Vision Seminar*

NASA Jet Propulsion Laboratory

January 2026

Generative Models of Action

*NVIDIA Research Radar*

NVIDIA

December 2025

**Understanding Actions from Video**  
*NYC Computer Vision Day*

**NYC CV Day**  
November 2024

**Learning the Organization of Action**  
*Speaker at the University of Maryland, Baltimore County*

**UMBC**  
September 2024

**Learning the Organization of Action**  
*Telluride Neuromorphic Workshop*

**Telluride**  
June 2024

**Understanding Actions from Video**  
*Conference on Robot Learning, Cognitive Science Workshop*

**CoRL**  
May 2023

## Challenges

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- EPIC Kitchens Action Recognition Challenge of 2024 (4th place)
- Leader of Team UMD at the Alexa Prize Simbot Challenge (Qualified into the semi-finals)
- EPIC Kitchens Action Anticipation Challenge of 2020 (1st place)
- Amazon Robotics Challenge (Qualified into finals)

## Research Interests

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My research focuses on learning structured representations of action from video to advance action understanding and robotics. I progressed from modeling contact events, to learning motion primitives, to developing executable “action programs,” and finally to training motion primitive policies that enable robots to interpret human demonstrations and execute them in new environments. Until now these pipelines relied entirely on vision and costly manual annotation; a wearable force sensor removes this bottleneck by providing automatic contact detection, strong cues for aligning annotated and unannotated video, and sparse indicators of interaction boundaries that remove the need for manual temporal segmentation.

## Service

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**Reviewer for:** ICRA, IROS, ICLR, CVPR, PAMI, and WACV.

**Outreach:** Regular high-school robotics mentor at Landsdowne High School (Baltimore MD), regular speaker at Ethiopian Community Center (Washington DC).

## Technical and Soft Skills

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- **Programming:** Python, C, C++, MATLAB
- **Software:** MuJoCo, OpenCV, ROS, SciPy, NumPy, ChibiOS, JAX, PyTorch, Buildroot, L<sup>A</sup>T<sub>E</sub>X
- **CAD:** KiCad, SolidWorks; capable: Altium, Eagle, LTSpice
- **Other:** Camera calibration; electronics & PCB design; 3D printing