Mohamed **El Banani**

3844 Bob and Betty Beyster Building
University of Michigan
Ann Arbor, MI 48104

mbanani.github.io
mbanani@umich.edu
+1 (404) 384-6071

Education

University of Michigan, Ann Arbor   Aug 2018 - *Present*
Ph.D. in Computer Science and Engineering
Advisor: Prof. Justin Johnson

University of Michigan, Ann Arbor   Aug 2016 - May 2018
M.S.E. in Computer Science and Engineering

Georgia Institute of Technology   Aug 2012 - Dec 2015
B.Sc. in Mechanical Engineering with Highest Honors
Minor in Computing and Intelligence
Study Abroad: Georgia Tech Lorraine, Metz, France (Spring 2014)

Publications

Learning Visual Representations via Language-Guided Sampling
M. El Banani, K. Desai, and J. Johnson
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023.

Self-supervised Correspondence Estimation via Multiview Registration
M. El Banani, I. Rocco, D. Novotny, A. Vedaldi, N. Neverova, J. Johnson, and B. Graham
IEEE Winter Conference on Applications of Computer Vision (WACV), 2023.

Bootstrap Your Own Correspondences
M. El Banani and J. Johnson
IEEE International Conference on Computer Vision (ICCV), 2021.
(**Oral: 3.3% acceptance rate**).

UnsupervisedR&R: Unsupervised Pointcloud Registration via Differentiable Rendering
M. El Banani, L. Gao, and J. Johnson
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.
(**Oral: 4.2% acceptance rate**).

Novel Object Viewpoint Estimation through Reconstruction Alignment
M. El Banani, J. Corso, and D. Fouhey
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020.

A Computational Exploration of Problem-Solving Strategies and Gaze Behaviors on the Block Design Task
M. Kunda, **M. El Banani**, and J. M. Rehg
Annual Meeting of the Cognitive Science Society (CogSci), Philadelphia, PA, 2016.

A Pilot Study of a Modified Bathroom Scale to Monitor Cardiovascular Hemodynamic in Pregnancy
O. Quesada, **M. El Banani**, J. Heller, S. Beach, M. Etemadi, S. Roy, O. Inan, J. Gonzalez, and L. Klein
Extended abstract at the *American College of Cardiology Meeting*, Chicago, IL, 2016.

Three-Dimensional Particle Tracking in Microfluidic Channel Flow Using In and Out of Focus Diffraction
B. Tasadduq, G. Wang, **M. El Banani**, W. Mao, W. Lam, A. Alexeev, and T. Sulchek
Flow Measurement and Instrumentation, 2015.

Building Computational Models to Explain Atypical Cognitive & Behavior Patterns on the Block Design Task
M. El Banani, J. M. Rehg, and M. Kunda
Autism Research Symposium, held by the Atlanta Autism Consortium. Atlanta, GA, 2015.

Research Experience

Graduate Student Researcher, UM Computer Vision Group   Nov 2019 - Present
Adviser: Prof. Justin Johnson
Working on 3D vision tasks with a focus on self-supervised learning.

Research Intern, Google Research (Cambridge, MA)   May 2023 - Present
Host: Dr. Varun Jampani

Research Intern, Facebook AI Research (London, UK)   May 2021 - Dec 2021
Host: Dr. Benjamin Graham
Self-supervised multiview 3D correspondence estimation.

Visiting Researcher, Fouhey AI Lab   May 2019 - Nov 2019
Host: Prof. David Fouhey
Viewpoint estimation for previously unseen objects.

Graduate Student Researcher, UM AI Lab   Aug 2016 - May 2019
Advisers: Prof. John Laird and Prof. Jason Corso
Human-in-the-Loop Visual Inference, with a focus on integrating expert knowledge into 3D vision tasks.

Undergraduate Research Assistant, Computational Perception Lab   Jan 2015 - Feb 2016
Advisers: Prof. Maithilee Kunda and Prof. James Rehg
Computational models of human cognition and behavior on the Kohs block design task.

Undergraduate Research Assistant, Inan Research Lab   Aug 2015 - Dec 2015
Adviser: Prof. Omer Inan
Automated characterization of pregnancy-related hemodynamics for Eclampsia diagnosis.

Undergraduate Research Assistant, Sulchek BioMEMS and Biomechanics Lab   Jan 2013 - Dec 2013
Advisers: Dr. Bushra Tasadduq and Prof. Todd Sulchek
3D tracking of micro-scale particles within microfluidic flow from 2D bright field video microscopy. Design and fabrication of flexible liquid-piston Stirling engines.

Talks

Self-supervised Correspondence Estimation via Multiview Registration
FAIR London, December 2021
FAIR Computer Vision Seminar, December 2021
WACV, January 2023

Bootstrap Your Own Correspondences
ICCV, October 2021

Unsupervised Point Cloud Registration from RGB-D Video
FAIR 3D Vision Seminar, August 2021

UnsupervisedR&R: Unsupervised Pointcloud Registration via Differentiable Rendering
CVPR, June 2021

{Human, Soar}-In-The-Loop: Visual Guidance through Reasoning
Soar Workshop, June 2017

Perception, Attention and Problem Solving on the Block Design Task
Soar Workshop, June 2016

Teaching Experience

University of Michigan, Graduate Student Instructor
    EECS 598: Deep Learning for Computer Vision   Fall 2020
    EECS 442: Computer Vision   Winter 2020
    EECS 442: Computer Vision   Fall 2019

Mentorship

Research Mentorship: (Undergraduate/Master's student collaborators or equivalent effort)

Shayekh Bin Islam, Fatima Fellowship	Jun 2023 - Present
Tharindu Wickremasinghe, Fatima Fellowship	Jun 2023 - Present
Tianyuan Du, UM CSE	May 2023 - Present
Janpreet Singh, UM ECE MSE (Next: Yembo)	Nov 2021 - May 2021
Luya Gao, UM CSE MSE (Next: Meta)	Aug 2020 - May 2021

Honors & Awards

CVPR 2023 Doctoral Consortium
Outstanding Reviewer: CVPR 2021, ICCV 2021
Outstanding Graduate Student Instructor - Honorable Mention, University of Michigan, 2021
Faculty Honors, Georgia Tech (2012-2015)
President's Undergraduate Research Award, Georgia Tech, 2015

Service and Outreach

Fatima Fellowship, Mentor   2023
An international mentorship program aimed at providing aspiring researcher in underserved populations with research opportunities in computer science.

Lunch & Lab with a Graduate Student, Graduate Student Volunteer   2017 - 2022
Met with 2-4 undergraduate students/semester to answer questions about graduate school, research, and the application process.

University of Michigan - CSE Buddy Program , Mentor   2021
Mentor to a first-year graduate student in the Computer Science and Engineering program. Program is aimed to provide an onboarding process to help ease the transition to graduate school.

AI4ALL - University of Michigan, Project Instructor   2019, 2020
Summer program aimed at providing an entry point to artificial intelligence, computer science and engineering to highschool sttudents from under-represented backgrounds.

University of Michigan Mentorship Program, Mentor   2017, 2018, 2019
Mentor for a group of 6-8 first-year undergraduate students to ease the transition from high-school to college. Program is focused on out-of-state, international, and first-generation students.

STEAMfest @ NSBE 2019, Presenter   Mar 2019
Represented the UM AI Lab at the 2019 National Society of Black Engineers Conference in Detroit.

Explore Graduate Studies @ CSE 2018 Workshop, Panel Member   Aug 2018
Panel for prospective graduate students to address questions and concerns about graduate school.

Professional Activities

Reviewer: CVPR, ICCV, ECCV, NeurIPS, TPAMI, WACV
Student Volunteer: CogSci 2016

Last updated: August 14, 2023