

Tanya Glozman, PhD

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Multidisciplinary researcher and engineer specializing in multi-modal sensing, computer vision, machine learning, geometry modeling and computational imaging. Ten years of industry experience, seven as a full-time engineer, developing algorithms for robotics, medical imaging, defense applications and camera sensors.

PROFESSIONAL EXPERIENCE

Aug 2021 - present: Applied Scientist, Apple AI/ML

Building multi-modal gesture recognition DL models and pipelines for wearable sensing technologies.
Tech-lead for a model fusion and evaluation pipeline on a large x-func project, from feasibility through productization.
Led ideation and prototyping on multiple projects in the wearable space.
Presented work at an internal Machine Learning Summit conference.
Founded Women in ML Circles for peer mentoring and career discussions.
Mentoring junior scientists and engineers.

Jan 2019 - Apr 2021: Research Scientist, Amazon Prime Air

Computer vision algorithms and ML models for mission-critical components in Amazon's drone delivery program.

- Built an automatic classifier training pipeline, used across the team.
- ML and DL models and pipelines for aerial object detection and tracking, trajectory classification and guided landing.
- Implemented 3D scene rendering using a combination of real and synthetic data.
- Performed data analysis, investigation of test flights (including on-call).
- Defined requirements for data collection and annotation for multiple pipelines across the autonomous perception stack.
- Authored the Prime Air's first academic paper, on collision avoidance, published in a top tier aviation conference.
- Initiated and led x-func effort to organize Amazon Prime Air's first external computer vision challenge focused on aerial perception tasks: <https://www.aicrowd.com/challenges/airborne-object-tracking-challenge>
Paved the path to other challenges: <https://www.aicrowd.com/organizers/amazon-prime-air>
- Helped organize the 1st Workshop on Airborne Object Tracking (AOT) held at ICCV 2021 <https://zontakm9.github.io/aot-iccvw21/>
- Authored a patent (accepted).
- Active in Women Leadership and Diversity efforts in Prime Air. Mentoring junior scientists and engineers.

Summer 2016, Spring 2015: Intern at Apple, Special Projects Group (SPG).

Computational imaging for autonomous perception - automatic distortion correction in images, as pre-processing for object detection. Computational geometry for scene understanding in autonomous AI applications.

- Data fusion between LIDAR data and camera input.
- Scene components classification for trajectory planning.

2011 – 2012: Image Processing Engineer at Aptina Imaging, Imaging Systems R&D team.

Developed computational imaging algorithms (e.g. parallax correction) for next-generation multi-sensor cameras. Aptina is a leading CMOS sensor technology company (currently part of ON Semiconductor).

2008 – 2010: Computer Vision Engineer at Rafael Advanced Defense Systems.

Developed imaging algorithms for various real-time systems: video image processing, sensor data fusion, motion detection, etc. Received three performance awards for developing effective solutions for time-constrained projects. Rafael is a leading Israeli defense technology company (most famously known for the Iron Dome air defense system).

2004 – 2006: Part-time Engineer at Philips Medical Systems, Haifa, Israel.

Evaluated medical imaging algorithms and automatic detection tools (CT and MR); represented the company in international medical conferences; led onsite software validation process for international outsource contractors (Shina systems, Claron Technologies); collaborated with physicians, physicists and software engineers.

2000– 2001: Israeli Communications/Intelligence Corps.

Radio / electronics technician and later in-charge of a team of technicians.

EDUCATION

2012 – 2018: PhD, Stanford University, Department of Electrical Engineering. Member of the Geometric Computing group and of Stanford Neuroscience Institute. Mentors: [Prof. Leonidas Guibas](#) (CS) and [Prof. Brian Wandell](#) (Neuroscience). Research topic: Shape modeling and variability mapping in human brain structures. Developed geometric and ML methods for quantification of neuroanatomical geometric variations: modeling, registration, correspondence mapping and classification for complex 3D shapes in various representations – point cloud, surface mesh, volumetric etc. Received a 3-year Stanford Interdisciplinary Graduate Fellowship, Next Generation Women Leaders award by McKinsey (2017) and an award from the Big Data in Neuroscience Workshop (2017).

Summer 2017: Stanford Ignite at Stanford Graduate School of Business.

Certificate Program in Innovation and Entrepreneurship.

2006 - 2008: MSc, Technion, Department of Biomedical Engineering. Mentor: [Prof. Haim Azhari](#). Research topic: Integrated ultrasonic imaging combining computed tomography and elastography.

2002 - 2005: BSc, Technion, Department of Biomedical Engineering.

Cum laude. Focus on image processing for medical imaging and biomechanics. Final project: Automatic 3D Vessel Segmentation on CT images using Deformable Models (in collaboration with Philips Medical Systems, Haifa, Israel). Won 2nd best yearly project.

PUBLICATIONS

[Tanya Glozman](#), [Anthony Narkawicz](#), [Ishay Kamon](#), [Franco Callari](#), [Amir Navot](#)

A Vision-based Solution to Estimating Time to Closest Point of Approach for Sense and Avoid. AIAA SciTech (2021)

[Tanya Glozman](#), [Lisa Bruckert](#), [Franco Pestilli](#), [Derek Yecies](#), [Leonidas Guibas](#), [Kristen Yeom](#)

Framework for Shape Analysis of White Matter Fiber Bundles. NeuroImage (2018).

[Tanya Glozman](#), [Justin Solomon](#), [Franco Pestilli](#), [Leonidas Guibas](#)

Shape-Attributes of Brain Structures as Biomarkers for Alzheimer’s Disease. Journal of Alzheimer’s Disease (2017).

[Tanya Glozman](#), [Justin Solomon](#), [Franco Pestilli](#), [Leonidas Guibas](#)

Learning Biomarkers for Alzheimer’s Disease from Shape Attributes of Brain Structures. ML4HC workshop, NIPS (2016).

[Tanya Glozman](#), [Le Rosemary](#), [Leonidas Guibas](#), [Franco Pestilli](#)

Classification of Alzheimer’s Disease based on White Matter Architecture. BioX symposium (2015).

[Tanya Glozman](#), [Haim Azhari](#)

A method for characterization of tissue elastic properties combining ultrasonic computed tomography with Elastography. Journal of Ultrasound in Medicine. (2010)

TEACHING

Fall 2013 and 2012: Radiology / BioEngineering Department, Stanford University

Co-created and lectured the course on Ultrasound Imaging and Therapeutic Applications.

2006 – 2008: Biomedical Engineering Department, Technion, Israel

Head TA, Ultrasound in medicine – principles and practices.

PROFESSIONAL ACTIVITIES

Organizer for ICCV2021 1st Workshop on Airborne Object Tracking (AOT) held at ICCV 2021

<https://zontakm9.github.io/aot-iccvw21/>

Reviewer for:

- AMLC (Amazon's ML Conference) , NeuroImage, Brain Structure and Function, Journal of Alzheimer's Disease.
- Grace Hopper Conference - Artificial Intelligence Track committee (2020)

Technical Consulting for IDEO and multiple startups, in the field of computer vision.

Board member for Women@PrimeAir organization.

OTHER PROJECTS

Winter 2017: Representation Learning in Computer Vision course, Stanford University

(CS dept.). Deep learning for Alzheimer's disease classification.

Spring 2014: Medical Innovation Incubator, Stanford University (BioX dept.)

3D-printed cervical brace based on CT data. Medical Innovation Incubator, Stanford.

Winter 2013: Computer Vision lab, Stanford University (CS dept.)

Developed a framework for capturing relationships between objects in an image using Amazon Mechanical Turk, part of the Visual Genome project. Mentor: Prof. Fei-Fei Li.

Fall 2013: Biodesign for Mobile Health, Stanford University (BioX dept.)

Designed a mobile app for connecting new parents. Won 1st place.

Fall 2012 – Fall 2013: Lucas Center for Imaging, Stanford University (School of Medicine).

Developed a method for performing imaging using a therapeutic ultrasound transducer. Mentor: Prof. Kim Butts-Pauly

Fall 2012: Computer Vision course, Stanford University (CS dept.)

Course project on Content Aware Image Enhancement (OpenCV, C++). Won 3rd place.