

AMIR GAT – RESUME

Full name: Amir D. Gat

Date and place of birth: 29/7/1979 Tel Aviv

Marital status: Married + 3

Website: <https://gat.net.technion.ac.il>

ACADEMIC DEGREES

2005 – 2010 Ph.D., *special track*
Faculty of Aerospace Engineering, Technion - IIT

2001 – 2005 B.Sc., *summa cum laude*
Faculty of Aerospace Engineering, Technion – IIT

ACADEMIC APPOINTMENTS

2012 – current Assistant Professor, Faculty of Mechanical Engineering, Technion - IIT.

2010 – 2012 Postdoctoral researcher, Graduate Aerospace Laboratories, California Institute of Technology.

2005 – 2010 Teaching assistant, Faculty of Mechanical Engineering, Technion - IIT.

PROFESSIONAL EXPERIENCE

2003 - 2005 Student position aerodynamics team - aeronautical systems division, Rafael Advanced Defense Systems.

ARMY SERVICE

1998 - 2001 Served as an infantry soldier in the Givaty brigade, finished service as a sergeant.

RESEARCH INTERESTS

- Theoretical research of fluid mechanics, specifically low-Reynolds and free-surface flows.
- Interaction of internal viscous flows with deformation and motion of elastic solid structures.
- Dynamics of soft robots actuated by embedded fluidic networks.
- Mechanical properties of composite fluid-solid structures.

TEACHING EXPERIENCE

- 2012 - current Lecturer
Faculty of Mechanical Engineering, Technion – IIT
034013 (undergraduate) – Fluid Mechanics 1
035035 (undergraduate) – Fluid Mechanics 2
036032 (undergraduate/graduate) – Analytic Fluid Mechanics
038797 (graduate) – Advanced Subjects in Mechanical Engineering (Advanced Fluid Mechanics)
036008 (undergraduate/graduate) – Compressible Fluid Mechanics
- 2005 - 2010 Teaching Assistant
Faculty of Aerospace Engineering, Technion – IIT
084314 Viscous Flow and Heat Transfer (undergraduate)
084505 Solid Mechanics (undergraduate)

DEPARTMENTAL ACTIVITIES

- 2013 - 2016 Seminar coordinator for the Faculty of Mechanical Engineering
- 2017- current Responsible on faculty website

PUBLIC PROFESSIONAL ACTIVITIES

- 2013-Current Secretary of The Israel Society for Theoretical and Applied Mechanics (ISTAM)
- 2012-Current Reviewer for:
- J. Fluid Mechanics
 - Physical Review Letters
 - Physics of Fluids
 - Langmuir
 - Applied Physical Letters
 - Applied Physics A
 - IACAS (conference)
 - Microfluidics and Nanofluidics
 - Soft Robotics
 - J. Fluids Engineering
 - AIChE
 - PLOS ONE
 - IEEE Access
 - Physical Review Fluids

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- The Israel Society for Theoretical and Applied Mechanics (ISTAM)
- American Physical Society (APS)
- European Mechanics Society (EuroMech)

HONORS

2015	Halevy Innovative Applied Engineering Award
2015	Rich Technion Innovation Award
2013	Tark award for research of aerospace structures
2010	The Lester-Deutsch fellowship for postdoctoral studies
2009	Jacobs prize for best publication of the year 2009 from the Technion - Israel Institute of Technology.
2008	Gutwirth award based on doctoral achievements
2008	Ilan Ramon award based on doctoral achievements
2006	Rubin award for the Technion's Ramtech project (two-stage ramjet)
2006	Excellence scholarship based on undergraduate studies
2005	<i>Summa cum laude</i> , B.Sc in Aerospace Engineering

GRADUATE STUDENTS AND POSTDOCS

(Primary adviser, unless otherwise mentioned)

Ph.D Students

In progress (7)

1. Shai Elbaz started March 2013 (expected to graduate at 2017), "Creating Complex Deformation Patterns and Increasing Effective Rigidity of Elastic Plates and Shells via Viscous Flows in Complex Internal Channel Networks". [J10, J14, P2, C10, C11, C13, C17, C20, C22, C32, C35, C41]
2. Yoav Matia, started August 2013 (expected to graduate at 2017), "Viscous Elastic Diffusion in Channel Networks Positioned within Elastic Plates." [J11, J17, P2, C16, C36, C43]
3. Arie Tulchinsky started August 2013 (expected to graduate at 2017), "Dynamics of elastic Hele-Shaw cells." [J12, J16, J18, C14, C15, C33, C42]
4. Evgeniy Boyko, (co-supervisor, primary advisor is Moran Berkovici) started 10/2014, "Electro-osmotic flow in Hele-Shaw configurations with non-uniform wall surface charge distributions." [J13, C18, C21, C38]
5. Benny Gamus, (co-supervisor, primary advisor is Yizhar Or) started 6/2016, "Dynamic legged locomotion of soft robots actuated by embedded fluidic networks."

6. Lior Salem, (TASP, co-supervised by Yizhar Or) started 12/2014, "Soft-robots based on embedded fluidic networks."
7. Peter Brietman, started 3/2017, "Viscous Peeling of Elastic Solids."

M.Sc. Students

(* denotes students in the Brakim program)

Completed (7)

1. Max Linshits*, August 2012 to May 2014, "Study of the Effects of Viscous Flow through an Elastic Cylinder on the Geometry and Buckling Failure mode of the Cylinder." [C12]
2. Yonatan Achache (TASP, co-supervised by Yossi Elimellech), started December 2013 (co-supervisor is Dr. Yossi Elimellech), "Innovative Propulsion and Maneuvering Techniques for Micro-Scale Autonomous Systems."
3. Roey Elfassy (TASP, co-supervised by Yossi Elimellech), started December 2013, "Innovative Underwater Propulsion and Maneuvering Techniques." [J15]
4. Itai Sarig*, (co-supervisor, primary advisor is Yuli Starosvetsky) started 10/2014, "Non-linear dynamics of viscous-elastic interactions." [J14, C18, C21, C38]
5. Yoni Friedman*, started 12/2014, "Acoustic waves interacting with an elastic membrane and a viscous liquid." [J21]
6. Tsah Elimellech*, started 10/2014, "Experimental studies of deformation of elastic plate by internal fluidic network." [J17]
7. Hila Jacob*, started 10/2014, "Compressible viscous flow through an elastic cylinder."
8. Amit Vurgraft*, started 10/2016, "Analysis of Composite Solid-Liquid Structures for Delaying Structural Failure"

In progress (6)

1. Lior Goldstein, (external student) started 3/2013, "Dynamics of Viscous Flow and Elastic Deformation in Annular Recoil Systems."
2. Netanel Hassan*, started 11/2015, "Analysis of aeroelastic properties of morphing wings actuated by embedded fluidic networks."
3. Eran Ben-Haim*, started 10/2016, "Dynamic locomotion of a soft robot actuated by embedded fluidic networks"
4. Aviv Tahar, started 10/2016, "Design Construction and Experimenting of Shape Morphing Wings Actuated via Embedded Fluidic Networks"
5. Ofek Peretz, started 3/2017, "Aeroelasticity of shape-morphing wings"

RESEARCH GRANTS

(Principal investigator, unless otherwise mentioned)

- 2013-2017 Israel Science Foundation (ISF), 760,000NIS, 818/13, "Creating Complex Deformation Patterns and Increasing Effective Rigidity of Elastic Plates or Shells via Viscous Flows in Complex Internal Channel Networks" PI: Amir Gat.
- 2014 Tark award for research of Aerospace Structures, 15,000USD, "Energy Harvesting and Propulsion via Complex Fluidic Networks Imbedded within Elastic Axisymmetric Shells" PI: Amir Gat.
- 2014 Center for Security Science & Technology (CSST), 150,000NIS "Energy Harvesting and Propulsion via Complex Fluidic Networks Imbedded within Elastic Axisymmetric Shells" PI: Amir Gat.
- 2015-2018 Maffat, 1,950,000NIS, "Soft-robots based on embedded fluidic networks" PIs: Amir Gat & Yizhar Or.
- 2015 Technion Autonomous System Program (TASP), 92,000USD "Autonomous Endoscopy Based on Photometric 3D Sensing and Guidance Control and Viscous-Elastic Propulsion Mechanism" PIs: Amir Gat & Alfred M. Bruckstein.
- 2015 Uzi Halevi Fund 20,000USD "Soft-robots based on embedded fluidic networks" PIs: Amir Gat and Yizhar Or.
- 2015 Technion Autonomous System Program (TASP), 27,000 USD "Soft robots with autonomous legged locomotion" PIs: Amir Gat & Yizhar Or.
- 2016 Center for Security Science & Technology (CSST), 70,000NIS "Design, Construction and Testing of a Prototype Morphing Wing Actuated via Embedded Fluidic Network" PI: Amir Gat.
- 2016-2018 KAMIN grant, 880,000NIS "Design, Construction and Testing of a Prototype Morphing Wing Actuated via Embedded Fluidic Network" PI: Amir Gat.
- 2017-2018 Charles Haar Grant, 20,000USD "Transient dynamics of composite solid-liquid structures due to external forces" PI: Amir Gat.
- 2018-2021 Ministry of Science and Technology (MOST), 1,100,000NIS, "Dynamic Legged Locomotion of a Soft Robot Actuated by flow in an Embedded Channel Network" PIs: Amir Gat & Yizhar Or.
- 2017-2018 Broida Fund for Applied Research, 50,000USD, "Shape-Morphing of Aircrafts via Embedded Fluidic Networks."

Participation in organizing conferences

- The Israel Society for Theoretical and Applied Mechanics Symposium, Tel Aviv, 1/12/13, 21/12/14, 13/12/15, 22/2/2017.
- “Soft Actuators” symposium, Haifa, 19/12/2016
- Session chair in APS-DFD 2017, Denver USA