

# Umut Varolgunes

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<b>Employment</b>	Szego Assistant Professor at Stanford University: September 2018 - June 2021
<b>Education</b>	<p>Undergraduate - Massachusetts Institute of Technology</p> <ul style="list-style-type: none"><li>• September 2009 - May 2013</li><li>• Bachelor of Science degrees in Mathematics and Physics</li><li>• GPA: 4.8/5</li></ul> <p>Graduate - Massachusetts Institute of Technology</p> <ul style="list-style-type: none"><li>• September 2013 - May 2018</li><li>• PhD. in Mathematics</li><li>• Advisor: Paul Seidel</li><li>• Thesis title: Mayer-Vietoris property for relative symplectic cohomology</li></ul>
<b>Research Interests</b>	symplectic geometry, Floer theory, algebraic geometry
<b>Publications</b>	<p>On the equatorial Dehn twist of a Lagrangian nodal sphere, Proceedings of the 22nd Gokova Geometry/Topology conference (2017)</p> <p>Mayer-Vietoris property for relative symplectic cohomology, Geometry &amp; Topology 25-2 (2021), 547–642</p> <p>Super-rigidity of certain skeleta using relative symplectic cohomology (joint with Dmitry Tonkonog), accepted for publication in Journal of Topology and Analysis</p> <p>Seifert form of chain type singularities, accepted for publication in Kyoto Journal of Math.</p>
<b>Preprints</b>	<p>On certain quantifications of Gromov’s non-squeezing theorem (joint with Kevin Sackel, Antoine Song and Jonathan Zhu) - <a href="https://arxiv.org/abs/2105.00586">https://arxiv.org/abs/2105.00586</a></p> <p>On homological mirror symmetry for chain type polynomials (joint with Alexander Polishchuk) - <a href="https://arxiv.org/abs/2105.03808">https://arxiv.org/abs/2105.03808</a></p> <p>Quantum cohomology as a deformation of symplectic cohomology (joint with Nick Sheridan and Strom Borman), <a href="https://arxiv.org/abs/2108.08391">https://arxiv.org/abs/2108.08391</a></p>
<b>Ongoing projects</b>	<p>Locality of relative symplectic cohomology for complete embeddings (joint with Yoel Groman), in writing</p> <p>Non-archimedean analytic mirrors of symplectic cluster manifolds (joint with Yoel Groman), in writing</p> <p>Framed <math>E_2</math> algebra structure on relative symplectic cohomology (joint with Mohammed Abouzaid and Yoel Groman), in writing</p>
<b>Awards and Honors</b>	<p>Gold Medals in 2008 and 2009 International Mathematics Olympiads.</p> <p>MIT Praecis Presidential Fellowship 2013 - 2014</p>

<b>Languages</b>	Turkish (native), English (fluent)
<b>Invited talks</b>	<p>Preprint seminar on symplectic geometry and related topics - Columbia University, October 12, 2015</p> <p>23rd Gokova Geometry and Topology Conference - May 30 - June 4, 2016</p> <p>Symplectic Geometry Seminar - Stanford University, January 30, 2017</p> <p>Student Symplectic Seminar - Stanford University, February 9, 2017</p> <p>Math-Physics Joint Seminar - UPenn, April 18, 2017</p> <p>Mini lecture series for graduate students on my thesis (4 lectures) - Columbia University, Spring 2017</p> <p>Symplectix seminar - Paris, September 15, 2017</p> <p>Geometry/Physics seminar - Northwestern University, September 28, 2017</p> <p>Topology and Symplectic Geometry / Math of Gauge Fields seminar - Stony Brook University, October 5, 2017</p> <p>Symplectic Geometry Seminar - Stanford University, October 9, 2017</p> <p>Seminar on Mirror Symmetry - UC Berkeley, October 13, 2017</p> <p>Topology Seminar - Princeton University, October 19, 2017</p> <p>Geometry/Topology Seminar - UC Davis, January 22, 2019</p> <p>North Carolina Symplectic Geometry Seminar - Stanford, May 6, 2019</p> <p>Mathematics seminar - Korean Institute of Advanced Study, Seoul, August 30, 2019</p> <p>Symplectic seminar - Stony Brook University, September 12, 2019</p> <p>Symplectic geometry, Gauge theory and Categorification Seminar - Columbia University, September 13, 2019</p> <p>Simons Collaboration on Homological Mirror Symmetry Annual meeting - New York, November 14, 2019</p> <p>Topology Seminar - University of Oregon, March 10, 2020</p> <p>Geometry, Symmetry and Physics Seminar - Rutgers University (online), May 14, 2020</p> <p>M-Seminar - Kansas State University (online), May 28, 2020</p> <p>Western Hemisphere Symplectic Geometry Seminar (online) - June 26, 2020</p> <p>UCGEN Seminar (online) - September 23, 2020</p> <p>Montreal, Princeton/IAS, Paris, Tel-Aviv Symplectic Zoominar (online) - October 16,</p>

2020

Boston University Geometry & Physics seminar (online) - March 24, 2021

Beijing-Novosibirsk seminar on geometry and mathematical physics (online) - April 15, 2021

Shafarevich Seminar - Steklov Institute, September 21, 2021

3CinG Annual Congress (online) - September 22, 2021

Friday seminar (?) - Higher School of Economics, September 24, 2021

Freemath (online) - September 28, 2021

**Organizational  
Activity**

Student organizer for 2016 (inaugural year) and 2017 Kylerec graduate student workshops

Mentor for Kylerec 2019

Organizer for Stanford Symplectic Geometry Seminar 2018-2020

Organizer for North California Symplectic Geometry Seminar 2018-2020

**Teaching**

TA for 18.01/02A (Expedited single and multi variable calculus), Fall 2015, MIT

TA for 18.03 (Differential equations), Spring 2016, MIT

TA for 18.095 (Winter break lecture series), Winter 2018

Lecturer for Math 113 (Linear algebra with proofs, undergraduate), Winter 2019, Stanford

Lecturer for Math 215B (Differential topology, graduate), Winter 2019, Stanford

Lecturer for Math 257C (Hamiltonian Floer theory, advanced graduate), Autumn 2019, Stanford

Lecturer for Math 257A (Symplectic geometry, graduate) Fall 2019, Stanford

Lecturer for Math 147 (Differential topology, undergraduate) Fall 2019, Stanford

Lecturer for Math 53\* (Ordinary differential equations, undergraduate) Spring 2020, Stanford

Lecturer for Math 215B (Differential topology, graduate), Winter 2021, Stanford

Lecturer for Math 53\* (Ordinary differential equations, undergraduate) Spring 2021, Stanford

Lecturer for Math 113 (Linear algebra with proofs, undergraduate), Spring 2021, Stanford

\*=more than 100 students