Hülya Argüz

Curriculum Vitae

Personal Information

Full name:	Nurömür Hülya Argüz (pronouns: she/her/hers)
Place of birth:	Berlin
Nationality:	Germany
E-mail:	hulya.arguz@maths.ox.ac.uk
Website:	www.maths.ox.ac.uk/people/hulya.arguz

Employment

09.2025–present	**Associate Professor, Senior Research Fellow**, Mathematical Institute, University of Oxford, United Kingdom
08.2022–07.2025	**Assistant Professor**, *(tenure-track)*, University of Georgia, United States
10.2021–07.2022	**Postdoctoral fellow**, Institute of Science and Technology, Austria Mentor: Tamàs Hausel
10.2019–09.2021	**FMJH Postdoc**, Université Paris–Saclay, UVSQ, France Funded by Fondation Mathématiques Jacques Hadamard. Host: Dimitri Zvonkine.
01.2017–09.2019	**Postdoctoral research associate**, Imperial College London, United Kingdom Supervisor: Tom Coates

Visiting/short term positions

01.2018-03.2018	**Visiting research fellow**, University of Cambridge, United Kingdom Mentor: Mark Gross
09.2016-12.2016	**Member**, IAS School, Princeton, United States Mentors: Mohammed Abouzaid and Paul Seidel

Education

16.08.2016	**PhD in Mathematics**, University of Hamburg, Germany Thesis: Log geometric techniques for open invariants in mirror symmetry. Supervisor: Bernd Siebert
28.03.2013	**MSc in Mathematics**, University of Hamburg, Germany Thesis: Lagrangian submanifolds in Kato–Nakayama spaces. Supervisor: Bernd Siebert
10.2011	**MSc in Mathematics**, *with Honors*, Middle East Technical University, Turkey
02.2008	**BSc in Mathematics**, *with Honors*, Middle East Technical University, Turkey

09.2003   **High School Diploma**, Izmir Fen Lisesi (Izmir Science High School), Turkey
This is a special boarding school inside the campus of Ege University, aiming to train scientists. It admits top students in a nationwide annual high school entrance exam, in which I ranked 7th among around a million students in 2000.

Grants and honors

2024–2025   **co-PI, NSF Research Training Group grant DMS 2342252**, *RTG: Geometry and Topology, $2,497,014.00.*

2023–2025   **PI, NSF standard grant DMS 2302116**, *New bridges to Gromov-Witten theory, $160,000.00.*

2024   **PI**, *NSF Supplement REU award*, Supplementary award DMS 2410155 (for the standard grant DMS 2302116), to organise summer Research Experiences for Undergraduates, $6,200.00.

2023   **co-PI, NSF conference grant**, *Georgia Algebraic Geometry Symposium, $24,980.00.*

2021   **PI, European Commision Marie-Curie grant**, *Curve Counting and Log Geometry, 253,052.00 Euros.*
I terminated this project when moving to the US on a tenure-track position.

2020   **Junior fellowship**, *Institut Mittag–Leffler, Sweden*, 30000 SEK.
To participate in the program "Knots, strings, symplectic geometry and dualities".

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2019   **Fondation Mathématiques Jacques Hadamard Postdoctoral Laureate**
This award, granted annually to three postdocs in total in all areas of pure mathematics, paid for my salary and expenses for two years in France.

2016   **Institute for Advanced Studies postdoctoral scholarship through NSF**
This fellowship paid for salary and expenses during the thematic program on *Homological Mirror Symmetry* in fall 2023.

2012-2016   **DFG (German research foundation) scholarship, via RTG1670**, *"Mathematics inspired by string theory and quantum field theory"*
This scholarship paid for salary and expenses during my MSc and PhD studies.

Papers (listed chronologically with dates they first appeared on arxiv)

2026   H. Argüz: Mock modularity of log Gromov–Witten Invariants: the mirror to P^2, 18 pages, preprint arXiv:2602.08153, submitted.

2025   H. Argüz, P. Bousseau: BPS polynomials and Welschinger invariants, preprint arXiv:2506.02770, 48 pages, submitted.

2024   V. Alexeev, H. Argüz, P. Bousseau: Non-toric brane webs, Calabi-Yau 3-folds, and 5d SCFTs, arXiv:2410.04714, 80 pages, **Communications in Mathematical Physics,** 406, 287 (2025).

2024   V. Alexeev, H. Argüz, P. Bousseau: The KSBA moduli space of stable log Calabi-Yau surfaces, arXiv:2402.15117, 91 pages, **Forum of Mathematics, Pi,** Volume 13, e22 Cambridge University Press, (2025).

2023   H. Argüz, P. Bousseau: Quivers and curves in higher dimension, arXiv:2308.07270, 38 pages, **Transactions of AMS,** (2024).

2023   H. Argüz: Quiver DT invariants and log Gromov–Witten of toric varieties, arXiv:2303.10811, **AMS Proceedings of Symposia in Pure Mathematics**, String Math 2022, Volume: 107, pg 1-15, (2024).

2023   H. Argüz, P. Bousseau: Quivers, Flow Trees, and Log Curves, arXiv:2302.02068, 61 pages, to appear at Algebraic Geometry, Foundation Compositio Mathematica.

2022   H. Argüz, P. Bousseau: Fock-Goncharov dual cluster varieties and Gross-Siebert mirrors, arXiv:2206.10584, **Journal für die reine und angewandte Mathematik (Crelle's Journal)**, Volume 2023, Issue 802, pg. 125-171, (2023).

2021   H. Argüz, P. Bousseau, R. Pandharipande, D. Zvonkine: Gromov–Witten theory of complete intersections via nodal invariants, arXiv:2109.13323, **Journal of Topology**, Volume 16, Issue 1, pg 264-343, (2023).

2021   H. Argüz: Equations of mirrors to log Calabi–Yau pairs via the heart of canonical wall structures, arXiv:2109.08664, **Mathematical Proceedings of the Cambridge Philosophical Society**, 175(2), pg. 381-421, (2023).

2021   H. Argüz, P. Bousseau: The flow tree formula for Donaldson-Thomas invariants of quivers with potentials, arXiv:2102.11200, **Compositio Mathematica**, 158 (12), pg. 2206-2249, (2022).

2021   H. Argüz: The Quantum Mirror to the Quartic del Pezzo Surface, arXiv:2112.09082, **Springer Proceedings in Mathematics and Statistics**, Lie Theory and Its Applications in Physics, 396, ISBN-13: 9789811947506, pg. 423-431, (2022).

2020   H. Argüz, M. Gross: The higher dimensional tropical vertex, arXiv:2007.08347, **Geometry & Topology** , 26-5, pg: 2135-2237, (2022).

2020   H. Argüz, P. Bousseau: Real log curves in toric varieties, tropical curves, and log Welschinger invariants, arXiv:2004.05124, **Annales de l'institut Fourier**, Volume 72, pg. 1547-1620 (2022).

2020   H. Argüz, T. Prince: On the cohomology groups of real Lagrangians in Calabi-Yau threefolds, arXiv:2002.03957, **Experimental Mathematics**, 32(1), 169–190, (2021).

2020   H. Argüz: Topological torus fibrations on Calabi–Yau manifolds via Kato–Nakayama spaces, arXiv:2003.11589, **Proceedings of Gökova Geometry Topology Conferences 2018/2019**, International Press, pg. 176-201, (2021).

2019   H. Argüz, T. Prince: Real Lagrangians in Calabi-Yau Threefolds, arXiv:1908.06685, **Proceedings of the London Mathematical Society** 121(2), pg. 287-311, (2020).

2018   H. Argüz, T. Prince: Note on Schoen's Calabi–Yau Threefolds, arXiv:1807.10172, **Rendiconti del Seminario Matematico Torino**, Vol. 79, 1, 15-20, (2021).

2017   H. Argüz: Mirror symmetry for the Tate curve via tropical and log corals, arXiv:1712.10260, **Journal of the London Mathematical Society**, Volume 105, Issue 1, pg. 343-411, (2022).

2016   H. Argüz: Real loci in (log-) Calabi-Yau manifolds via Kato-Nakayama spaces of toric degenerations, arXiv:1610.07195, **European Journal of Mathematics**, 7(3), 869-930, (2021).

2012   H. Argüz, M. Kalafat: Complex and symplectic structures on Panelled Web 4-manifolds, arXiv:1201.4605, **Topology and its Applications**, 159, no:8, pg 2169-2173, (2012).

2011   H. Argüz, M. Kalafat, Y. Ozan: Self dual metrics on non-simply connected 4-manifolds, arXiv:1108.0433, **Journal of Geometry and Physics**, Volume 64, pg 79-82, (2013).

Invited Lectures at Conferences

08/2026   **Hodge theoretic and combinatorial aspects of mirror symmetry,** , *BIRS, the Casa Matemática Oaxaca, Mexico*

07/2026   **Symplectic geometry in St Andrews,** , *St Andrews, UK*

06/2026   **Geometry of instantons and quivers,** , *Lille, France*

05/2026   **25th anniversary of the Gross–Siebert program,** , *Cetraro, Italy*

03/2026   **77th British Mathematical Colloquium,** , *Cardiff University, UK*

06/2025   **Enumerative Geometry and Representation Theory** , *University of Pisa, Italy*

05/2025   **Mirror Symmetry Inspired by String Theory** , *Chinese University of Hong-Kong, Hong-Kong*

05/2025   **Vector Bundles on Curves – Quivers and Sheaves** , *University of Utrecht, Netherlands*

02/2025   **Homological Mirror Symmetry 2025** , *University of Miami, US*

02/2025   **Recent developments in higher genus curve counting**, *Simons Center of Geometry and Physics, US*

01/2025   **AMS meeting on Vector Bundles and Quantization**, *Seattle, US*

09/2024   **Geometry and Physics of Mirror Symmetry**, *University of Sheffield, UK*

07/2024   **LMS Invited Lectures**, *Imperial College London, UK*

06/2024   **String-Math 2024**, International Center for Theoretical Physics, Italy

05/2024   **Geometric, algebraic, and physical structures around quadratid differentials**, Simons center for Geometry and Physics, United States

05/2024   **Real and Logarithmic Enumerative Geometry**, *Oberwolfach, Germany*

04/2024   **Southern California Algebraic Geometry Seminar**, *Caltech, United States*

03/2024   **Algebraic Geometry Northeastern Series**, Boston College, United States

02/2024   **Geometry of the South**, University of Miami, United States

01/2024   **Homological Mirror symmetry**, University of Miami, United States

11/2023   **IberoSing International Workshop 2023: Mirror symmetry & Hodge ideals**, Instituto de Matemáticas Universidad de Granada, Spain

10/2023   **Complex Lagrangians, Mirror Symmetry, and Quantization**, Banff International Research Station, Canada

06/2023   **Conference on Hodge theory, Mirror Symmetry, and Physics of Calabi-Yau Moduli**, University of Heidelberg, Germany

06/2023   **Richmond Geometry Meeting**, Virginia Commonwealth University, United States

01/2023   **Homological Mirror Symmetry**, IMSA University of Miami, United States

01/2023   **AMS Joint Math Meetings**, Special Session on Excursions in Arithmetic Geometry, Boston, United States

11/2022   **Kansas Geometry Day 2022**, University of Kansas, United States

11/2022   **Annual Meeting of the Simons Collaboration on Homological Mirror Symetry**, Simons Foundation, NYC, United States

09/2022   **Quivers, representation theory and physics**, University of Cologne, Germany

09/2022   **StringMath parallel session**, University of Warsaw, Poland

07/2022   **Workshop on Quantum Geometry**, IHÉS, France

04/2022   **Workshop on Quivers, Calabi–Yau Threefolds and DT Invariants**, Sorbonne, France

04/2022   **Recent Advances on Moduli Spaces of Curves**, Leysin, Switzerland

11/2021   **Journés Géométrie Algébrique et Géométrie Complexe**, Angers, France

10/2021   **New Techniques on Resolution of Singularities**, Oberwolfach, Germany

09/2021   **Annual workshop of 3CinG**, University of Warwick, UK

09/2021   **Tropical geometry and Singularities**, *Lille, France*

06/2021   **XIV. Workshop on Lie Theory and its Applications in Physics**, Sofia, Bulgaria

06/2021   **Summer School of the ANR on Symplectic, Real, and Tropical Aspects of Enumerative Geometry**, le Croisic, France

01/2021   **Arithmetic and Algebraic Geometry**, AMS joint math meetings, online

10/2021   **Floer-theoretic and algebro-geometric aspects of SYZ mirror symmetry**, Simons Foundation, online

12/2021   **Moduli Spaces and Stability**, Online FRG Workshop

02/2020   **5'th KTGU Mathematics Workshop for Young Researchers**, Kyoto, Japan

06/2019   **Logarithmic Algebraic Geometry**, Oberwolfach, Germany

02/2019   **Fourth Meeting for Young Women in Mathematics**, Freiburg, Germany

02/2019   **Matrix Factorizations and Mirror Symmetry**, KIAS, Seoul, South Korea

06/2018   **57th Annual Georgia Topology Conference**, University of Georgia, University of Georgia

03/2018   **Tropical Geometry, Amoebas and Polytopes**, Institut Mittag-Leffler, Djursholm, Sweden

02/2018   **GLEN British "Algebraic Geometry Meeting**, Sheffield, UK

12/2017   **Conference on Mirror Symmetry and Related Topics**, Moscow, Russia

08/2017   **Pacific Rim Conference on Complex and Symplectic Geometry**, IBS Center for Geometry and Physics, Pohang, South Korea

04/2015 **Tropical Aspects in Geometry, Topology and Physics**, Oberwolfach, Germany

Talks at Seminars/Colloquia

02/2026 SNGA: Seminario Nacional de Geometría Algebraica, Mexico (online)
06/2025 Algebraic and Symplectic Geometry Seminar, University of Oxford, UK
01/2025 Algebraic Geometry Seminar, University of Utah, US
12/2024 Seminar at the Institute of Mathematics, Academia Sinica, Taipei, Taiwan
11/2024 Mathematical physics seminar, University of Columbia, US
10/2024 Algebra seminar, Michigan State University, US
09/2024 M-seminar, Kansas University (online), US
04/2024 Algebra and geometry seminar, Ohio-State University, US
04/2024 Algebra seminar, University of Oregon, US
11/2023 Odtü - Bilkent algebraic geometry seminar (online)
07/2023 DRP Math Türkiye, (online)
02/2023 Geometry seminar, University of Ioawa, (online)
11/2022 Seminar on Clusters and Braids, organized by Gorsky and Simental (online)
12/2021 Colloquium at the University of Oklahoma (online)
11/2021 Colloquium at the University of Georgia (online)
11/2021 Colloquium at the University of Illinois Chicago (online)
11/2021 Seminar on Complex Algebraic Geometry,Nancy, France
11/2021 Seminar on Algebraic Geometry, IST Austria
11/2021 Colloquium at the Hausdorff Center of Mathematics, Bonn (online)
06/2021 Tropical Geometry in Zoom Seminar, Goethe University, Frankfurt (online)
05/2021 Audition for a maitre de conférence post, Paris-Orsay, France (online)
04/2021 Audition for a maitre de conférence post, Angers, France (online)
04/2021 Audition for a maitre de conférence post, Paris, France (online)
04/2021 Seminar on Algebra, Geometry and Physics, Bonn&Humboldt (online)
03/2021 Seminar on cluster algebras and quiver representations, Paris (online)
02/2021 Colloquium talk at Vrije Universiteit Amsterdam (online)
01/2021 Versailles Algebra and Geometry Seminar, France (online)
12/2020 Boston University Geometry and Physics Seminar, US (online)
12/2020 Northwestern Geometry and Physics Seminar, US (online)
12/2020 Zoom Algebraic Geometry Seminar, UK (online)
10/2020 Moduli Across the Pandemic Seminar, US (online)
09/2020 UCGEN Algebraic Geometry Seminars, Türkiye, (online)
05/2020 Zoomerfest Seminar, Moscow, Russia (online)
04/2020 Seminar in Real and Complex Geometry, Tel Aviv, Israel (online)
04/2020 Seminar on cluster algebras and quiver representations, Paris, France
01/2020 Seminar on Tropical Geometry in Europe, Nantes, France

12/2019	Seminar on Algebraic Geometry, IST Austria
10/2019	Seminar on Cluster algebras and quiver representations, Paris Diderot, France
10/2019	Seminar on Arithmetic and Algebraic Geometry, Versailles, France
10/2019	Seminar on Enumerative Algebraic Geometry, Sorbonne University, France
01/2019	Colloquium talk at Radboud University, Nijmegen, Netherlands
11/2018	Séminaire de Géométrie Enumérative, Jussieu, France
01/2017	Mirror Symmetry and String Theory Seminar, University of Hong-Kong
12/2017	Algebraic Geometry Seminar, University of Hannover, Germany
05/2017	Algebraic Geometry Seminar, University of Warwick, UK
02/2017	Algebraic Geometry Seminar, Imperial College London, UK
12/2016	Homological Mirror Symmetry Seminar, University of Pennsylvannia, US
12/2016	Algebraic Geometry Seminar, University of Princeton, US
11/2016	Symplectic Geometry and Gauge Theory Seminar, University of Columbia, US
11/2016	Algebraic Geometry Seminar, University of California, Berkeley, US
11/2016	Algebraic Geometry Seminar, University of Texas Austin, US
11/2016	Geometry Seminar, University of Rochester, US
11/2016	Seminar on the Maths of Gauge Fields, Simons Center, Stony Brook, US
09/2016	Postdoctoral Members Seminar, IAS School, Princeton, US
05/2016	Seminar on Algebra, Geometry and Quantization, University of Luxembourg
12/2015	North German AG Seminar, Freie Universität Berlin, Germany
09/2015	Seminar on Algebra, Geometry and Physics, MPIM, Bonn, Germany

Teaching

2025 Michaelmas Term	Instructor, B3.2 Geometry of Surfaces, University of Oxford.
2024 fall	Instructor, Math 8300 Introduction to Algebraic Geometry , University of Georgia.
2024 fall	Instructor, Math 2270 Calculus III for Science and Mathematics, University of Georgia.
2024 spring	Instructor, Math 8800 Sheaf Cohomology, University of Georgia.
2023 fall	Instructor, Math 8300 Toric Geometry, University of Georgia.
2023 fall	Instructor, Math 3300 Applied Linear Algebra (2 sections), University of Georgia.
2023 spring	Instructor, Math 2500 Calculus III for Engineers, University of Georgia.
2022 fall	Instructor, Math 2250 Calculus I, University of Georgia.
2019	Instructor, Riemannian Geometry, Imperial College London.
2014	TA, Algebra, University of Hamburg.
2013	TA, Algebraic Geometry, University of Hamburg.

Supervision

Postdocs:

2023 – 2024 Yu Wang, University of Georgia (*subsequent position: Louisiana State University*)

PhD Students:

2024 – 2025 Kaden Saucedo, University of Georgia

2023 – 2025 Sayan Chattopadhyay (joint with Pierrick Bousseau), University of Georgia

BSc/Honors/MSc students:

2026 Oxford MSc in Mathematical and Theoretical Physics dissertation supervisor of Zhiheng Huai, University of Oxford

2026 Oxford MSc in Mathematical Sciences (OMMS) dissertation supervisor of Romain Amzallag, University of Oxford

2026 Oxford MSc in Mathematical Sciences (OMMS) dissertation supervisor of Nicholas Othen, University of Oxford

2026 Oxford MSc in Mathematical Sciences (OMMS) dissertation supervisor of Runze Li, University of Oxford

2024 REU project mentor for Sara Rose Logsdon, during *REU: non-commutative algebra from geometry*, University of Georgia

2024 REU project mentor for Ava Kuhlman, during *REU: non-commutative algebra from geometry*, University of Georgia

2023 Honors project adviser for Zachary Wright, on *Quaternions and Rotations*, University of Georgia

2023 DRP mentor of Kyle Jones, on *The secondary polytope*, University of Georgia

2019 MSc thesis advisor (co-supervised with Tom Coates) for Vivek Mistry, on *Tropical algebraic geometry*, Imperial College London

Service

◇ Co-organizer REU: non-commutative algebra from geometry , University of Georgia, GA, August, 2024

◇ Faculty coordinator UGA Mathcamp 2024, University of Georgia, GA, July 2024

◇ Advisory committee member for the Institue of the Mathematical Sciences of the Americas (IMSA) since spring 2024.

◇ Co-organizer of the Georgia algebraic Geometry Symposium, funded by the National Science Foundation and the University of Georgia, March 21-23, 2025

◇ Co-organizer of the 1st edition of Industrial Maths Days, University of Georgia, GA, April 27, 2024

◇ Co-organizer of the 1st edition of Sonia Kovalevsky Days, University of Georgia, GA, April 20, 2024

◇ Co-organizer of the AMS Special Session on Moduli Spaces in Algebraic Geometry, Florida State University in Tallahassee, FL, March 23-24, 2024

- ◇ Co-organizer of the Georgia algebraic Geometry Symposium, funded by the National Science Foundation and the University of Georgia, April 28-30, 2023
- ◇ Reviewer for: AMS Mathematical Reviews and zbMath
- ◇ Refereeing (*annually ~ 3-4 papers*) for: Advances in Mathematics, Compositio Mathematica, Journal of Differential Geometry, Journal of the London Mathematical Society, Notices of AMS, Transactions of AMS.

Languages

- ◇ English (fluent), German (fluent), French (fluent), Turkish (fluent)