

# Hülya Argüz

## *Curriculum Vitae*

### Personal Information

Full name: Nurömür Hülya Argüz (pronouns: she/her/hers)  
Nationality: Germany  
E-mail: [hulya.arguz@maths.ox.ac.uk](mailto:hulya.arguz@maths.ox.ac.uk)  
Website: <https://sites.google.com/view/hulya-arguz>

### Employment

09.2025– current **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  
10.2019–09.2021 **Postdoctoral scholar**, Université Paris–Saclay, UVSQ, France  
Supervisor: [Dimitri Zvonkine](#)  
01.2017–09.2019 **Postdoctoral research associate**, Imperial College London, United Kingdom  
Supervisor: [Tom Coates](#)

### Visiting/short term positions

10.2021–07.2022 **IST fellow**, Institute of Science and Technology, Austria  
Supervisor: [Tamàs Hausel](#)  
01.2018–03.2018 **Visiting research fellow**, University of Cambridge, United Kingdom  
Supervisor: [Mark Gross](#)  
09.2016–12.2016 **Member**, IAS School, Princeton, United States  
Supervisors: [Mohammed Abouzaid](#) and [Paul Seidel](#)

### Education

16.08.2016 **PhD in Mathematics**, University of Hamburg, Germany  
Thesis title: Log geometric techniques for open invariants in mirror symmetry.  
Supervisor: [Bernd Siebert](#)  
28.03.2013 **MSc in Mathematics**, University of Hamburg, Germany  
Thesis title: 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.

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## 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 Commission 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”.
- 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.

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

- 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 the American Mathematical Society**, DOI: 10.1090/tran/9232, (2024).

- 2023 H. Argüz: Quiver DT invariants and log Gromov–Witten of toric varieties, arXiv:2303.10811, **String Math 2022**, AMS Proceedings of Symposia in Pure Mathematics, 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, **Lie Theory and Its Applications in Physics**, Springer Proceedings in Mathematics and Statistics, 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 GGT, 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, published at the **Journal of Geometry and Physics**, Volume 64, pg 79-82, (2013).

## Other (PhD thesis and reports)

- 2019 H. Argüz: Toric degenerations and tropical enumeration of real curves with Welschinger signs, Oberwolfach reports, DOI: 10.4171/OWR/2019/27, 45-47.
- 2016 H. Argüz: Log-geometric techniques for open invariants in mirror symmetry. **PhD thesis, University of Hamburg**.
- 2015 H. Argüz: Floer theory for the Tate curve via tropical geometry, Oberwolfach reports, DOI: 10.4171/OWR/2015/23, 1290-1293.

## Invited Lectures at Conferences

- 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 quadratic 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 **Special Session on Excursions in Arithmetic Geometry II**, AMS Joint Math Meetings at 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 Symmetry**, 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 **Journées 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 **Workshop on 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 **Workshop on 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

- 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 Iowa, (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 Pennsylvania, 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.

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## 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:

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

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## 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 Institute of the Mathematical Sciences of the Americas (IMSA), since 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
- ◇ Refereed for: Notices of AMS, Advances in Mathematics, Compositio Mathematica, Journal of Differential Geometry, Journal of the London Mathematical Society.

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## Languages

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