

# Daniel Tubbenhauer

# Curriculum vitae



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## Contact

Address     ▶▶ **The University of Sydney** School of Mathematics and Statistics,  
Fo7 - Carlaw Building, Office Carlaw 827, NSW 2006, Australia

Current position     ▶▶ **ARC future fellow** The University of Sydney

## Employment History

Dec.2023–Dec.2027     ▶▶ **ARC future fellow** The University of Sydney and Australian research council (ARC)  
Sydney, Australia

Jul.2021–Dec.2023     ▶▶ **Senior research fellow** The University of Sydney  
Sydney, Australia

Jan.2018–Dec.2020     ▶▶ **Lecturer** Universität Zürich  
Zürich, Switzerland

Sep.2015–Dec.2017     ▶▶ **Postdoctoral researcher** Hausdorff Center for Mathematics (HCM)  
Bonn, Germany

Nov.2013–Jan.2015     ▶▶ **Postdoctoral researcher** Centre for Quantum Geometry of Moduli Spaces (QGM), Aarhus, Denmark

## Awards and fellowships

Jul.2025     ▶▶ **Fellowship** Heilbronn Distinguished Visiting Fellowship  
Cambridge, United Kingdom  
Sponsored by the Isaac Newton Institute

Dec.2023–Dec.2027     ▶▶ **ARC future fellowship** See above  
Sydney, Australia  
Sponsored by the ARC

Jan.2021–Jun.2021     ▶▶ **Fellowship** Hausdorff Center for Mathematics (HCM)  
Bonn, Germany  
Sponsored by the HCM

## Awards and fellowships (continued)

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- Feb.2019–Mar.2019    ▶▶ **Invited Researcher** Mathematical Sciences Institute (MSI)  
Canberra, Australia  
Sponsored by the Australian National University (ANU)
- Feb.2015–Aug.2015    ▶▶ **Invited Researcher** Université Catholique de Louvain  
Louvain-la-Neuve, Belgium  
Sponsored by the Deutsche Forschungsgemeinschaft (DFG)
- Nov.2014–Dec.2014    ▶▶ **Invited Researcher** Tata Institute of fundamental research (TIFR)  
Mumbai, India  
Sponsored by the Danish National Research Foundation (DNRF)
- Aug.2013–Oct.2013    ▶▶ **Junior fellowship** Georg–August–Universität Göttingen  
Göttingen, Germany  
Sponsored by Graduiertenkolleg GRK 1493

## Education

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- Apr.2010–Aug.2013    ▶▶ **Ph.D. in mathematics** Georg–August–Universität Göttingen  
Graduiertenkolleg GRK 1493  
Thesis title: *Categorification and applications in topology and representation theory*  
Finished: 28.Aug.2013
- May.2007–Mar.2010    ▶▶ **M.Sc. Mathematics** Georg–August–Universität Göttingen  
Graduiertenkolleg GRK 1493  
Thesis title: *Virtual Khovanov homology*  
Finished: 12.Mar.2010

## Publication metrics

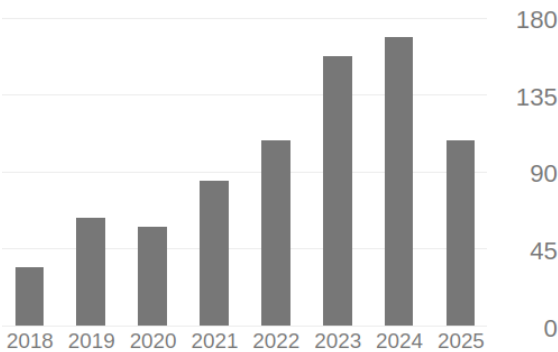
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- Research publications    ▶▶ **The full list is a separate file** 51 papers in total, 43 published papers, 9 submitted preprints, 2411 published pages, 21 open access publications

# Publication metrics (continued)

Research reach   ▶▶ **Citations** 915 with h-index 19 on Google Scholar, 404 on MathSciNet, 926 on Research Gate; Stats from June 29, 2025

Citations	915	693
h-index	19	16
i10-index	29	27



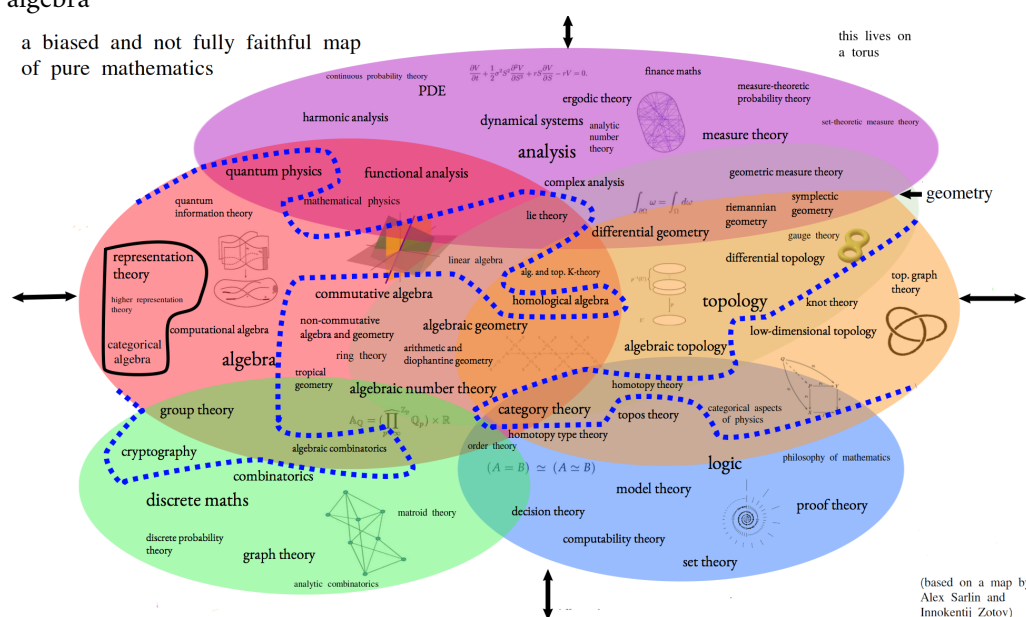
Research fields   ▶▶ **ArXiv identifier** 44 papers listed on arXiv in math.RT, 36 in math.QA, 20 in math.GT, 15 in math.CT, 11 in math.RA, 4 in math.GR, 4 in math.CO, 2 in cs.CR, 3 in cs.LG, 1 in stat.ML

Research range   ▶▶ **Mathematics Subject Classification 2020 (MSC2020)** My papers cover the fields 05 (Combinatorics), 11 (Number theory), 14 (Algebraic geometry), 15 (Linear and multilinear algebra; matrix theory), 16 (Associative rings and algebras), 17 (Nonassociative rings and algebras), 18 (Category theory; homological algebra), 20 (Group theory and generalizations), 22 (Topological groups, Lie groups), 26 (Real functions), 57 (Manifolds and cell complexes), 62 (Statistics), 68 (Computer Science), 94 (Information and communication, circuits)

## Publication metrics (continued)

Research interest ►► **Main fields** representation theory, higher representation theory, (categorical) algebra

a biased and not fully faithful map  
of pure mathematics



**Keywords** 2-representations, categorical algebra, additive and fusion categories, quantum algebra, low-dimensional topology, link homologies

Coauthors ►► **31 coauthors** from Australia, Belgium, China, Denmark, France, Germany, India, Japan, Portugal, Sweden, Switzerland, United Kingdom, United States

## Funds raised

- Summary ►► **\$2,303,875** I have raised a total of \$2,303,875, \$1,358,746 as the sole applicant, since 2013  
The numbers are approximate values converted to AUD
- 2025 ►► **\$6,000** Heilbronn Distinguished Visiting Fellowship  
This was awarded
- 2024,2 ►► **\$572,736+\$72,393** Discovery project from the Australian Research Council (ARC)  
This was a joint application of 4 people
- 2024,1 ►► **\$6,500** University of Sydney 2024 Strategic Research Fund  
This was awarded
- 2023 ►► **\$815,890+\$431,856** Future fellowship from the Australian Research Council (ARC)  
I was the sole applicant
- 2022 ►► **\$60,000** from the Australian Mathematical Sciences Institute (AMSI)  
This was a joint application of 4 people
- 2020 ►► **\$120,000** from the Junior Hausdorff Trimester Program of the Hausdorff Institute for Mathematics (HIM)  
This was a joint application of 10 people

## Funds raised (continued)

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- 2019    ▶▶    **\$12,000** from the ANU  
This was a joint application of 2 people
- 2018    ▶▶    **\$30,000** from SwissMap  
I was the sole applicant
- 2017    ▶▶    **\$120,000** from the Junior Hausdorff Trimester Program of the HIM  
This was a joint application of 6 people
- 2016    ▶▶    **\$25,000** from the HCM  
I was the sole applicant
- 2015    ▶▶    **\$22,500** from the DFG  
I was the sole applicant
- 2014    ▶▶    **\$5,000** from the DNRF  
I was the sole applicant
- 2013    ▶▶    **\$4,000** from the Universität Göttingen  
I was the sole applicant

## Organization of events

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- Jun 2025    ▶▶    **Representation theory down under** two week conference held at the University of Sydney  
Role: a main organizer
- Feb 2023    ▶▶    **Categorification in representation theory** two week conference to be held at the University of Sydney  
Role: a main organizer
- Nov & Dec 2020    ▶▶    **Monoidal and 2-categories in representation theory and categorification** one week conference held at the Universität Bonn  
Role: a main organizer
- Oct 2020    ▶▶    **Lecture series on modified traces in algebra and topology** one week conference held at the Universität Bonn  
Role: a main organizer
- Sep to Dec 2020    ▶▶    **New Trends in Representation Theory** Junior Hausdorff Trimester Program HIM in Bonn  
Role: a main organizer
- Sep 2018    ▶▶    **Interactions of low-dimensional topology and (higher) representation theory** one week conference held at the Universität Zürich  
Role: sole organizer

## Organization of events (continued)

- Nov & Dec 2017    ▶▶ **Workshop: Categorification, representation theory and symplectic geometry**  
one week conference held at the Universität Bonn  
Role: a main organizer
- Nov 2017    ▶▶ **Winter school: Categorification, representation theory and symplectic geometry**  
one week winter school held at the Universität Bonn  
Role: a main organizer
- Sep to Dec 2017    ▶▶ **Symplectic Geometry and Representation Theory** Junior Hausdorff Trimester  
Program HIM in Bonn  
Role: a main organizer
- May 2016    ▶▶ **Workshop: Categorification** one week conference held at the Universität Bonn  
Role: sole organizer

## Invited keynote and speaker addresses

- Summary    ▶▶ **The full list is a separate file** 104 invited talks  
I have received 3+ invitations each year, to selective conferences as an invited speaker  
*Below I list only the ones from 2024*
- Nov.2024    ▶▶ **Conference talk** *Tensor Categories, Quantum Symmetries, and Mathematical Physics*  
University of Melbourne, Australia
- Aug.2024    ▶▶ **Lecture series** (9 lectures) *Introduction to categorification*  
Beijing Institute of Technology, China
- Jul.2024, 2    ▶▶ **Conference talk** *Diagrammatic Intuition and Deep Learning in Mathematics*  
University of York, United Kingdom
- Jul.2024    ▶▶ **Lecture series** *Combinatorial representation theory and diagrammatic categorification*  
University of York, United Kingdom
- Jun.2024    ▶▶ **Conference talk** *Representation theory, geometry, and categorification*  
Beijing Institute of Technology, China
- May.2024    ▶▶ **Seminar talk** Feza Gursey Research Center for Physics and Mathematics, Turkey
- Apr.2024    ▶▶ **Seminar talk** The University of Sydney, Australia
- Jan.2024, 2    ▶▶ **Seminar talk** The University of Southern California, United States
- Jan.2024    ▶▶ **Conference talk** *Symmetric Tensor Categories and Representation Theory*  
Institute for Pure and Applied Mathematics, United States

## Students

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- Current    ▶▶ **Primary supervisor** 3 PhD students, 3 master students  
They will finish 2025 or 2026
- ▶▶ **Secondary supervisor** 4 PhD student, 0 master students  
They will finish 2025 or 2026
- Past       ▶▶ **Primary supervisor** 1 Ph.D. student, 4 master students  
All finished (2021 four times, 2022 once, 2024 once)
- ▶▶ **Secondary supervisor** 4 Ph.D., 4 master and 2 bachelor students  
Finished (2017 (three times), 2018, 2019 (twice), 2022, 2023)
- Outreach  ▶▶ **Yulia's dream** Supervisor in 2024/2025, supervising 2 students  
*Yulia's Dream is part of the MITs Primes program, and a free math enrichment and research program for exceptional high school students (grades 10-11) from Ukraine.*
- Other      ▶▶ I was on 2 PhD evaluation committees, on 2 as the chair

## Teaching & related

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- Lecturing  ▶▶ **The full list is a separate file** 29 lectures given in total, 10 courses, 10 seminars, 9 other, 0 upcoming  
*I am on a 4 year teaching break because of my ARC future fellowship*
- Hiring      ▶▶ I was on 1 hiring committees, on 0 as the chair

## Miscellaneous

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- Pronouns   ▶▶ They/them
- LGBT+ outreach  ▶▶ Associated with: Spectra, the association for LGBTQ+ mathematicians
- ▶▶ Associated with: Women and Diverse Genders in Maths Society (WAMSOC)
- YouTube     ▶▶ Mathematical education channel (the link is in the header)  
665+ videos, 31400+ subscribers, 1160676+ views
- GitHub       ▶▶ All my TeX files, all code etc. can be found on GitHub (the link is in the header)

## Miscellaneous (continued)

Computer skills	▶▶ C and C++, advanced GAP, advanced HTML, advanced Java, advanced Java script, advanced Magma, expert Mathematica, expert Python, expert PyTorch, advanced Rust, advanced SAGEMath, expert Other programming languages, basic Other computer algebra systems, basic
Professional memberships	▶▶ American Mathematical Society Deutsche Mathematiker Vereinigung European Mathematical Society
Languages	▶▶ German, native language English, fluent, CEFR Level C2 (certified by IELTS) Danish & Dutch & Latin & Swedish, basic French, very basic
I was referee	▶▶ In total 102 times Adv. Math. (six times), Algebr. Geom. Topol. (four times), Algebr. Represent. Theory (three times), Am. J. Math., Ann. Sci. Éc. Norm. Supér. (twice), Ann. of Math., Ann. of Rep. Theory (three times), Arab. J. Math., Ark. Mat., Bull. Malays. Math. Sci. Soc., Canad. J. Math. (twice), Compos. Math. (three times), Comm. Algebra (twice), Contemp. Math. (three times), Czechoslovak Math. J., Duke Math. J., Electron. Res. Arch. (twice), Geom. Topol., Glasg. Math. J. (twice), Homology Homotopy Appl, Int. Math. Res. Not. IMRN (three times), Invent. Math., J. Algebra (five times), J. Algebraic Combin., J. Aust. Math. Soc., J. Comb. Algebra (twice), J. Eur. Math. Soc. (four times), J. Knot Theory Ramifications (twice), J. Korean Math. Soc., J. Math. Cryptol., J. Pure Appl. Algebra, J. Lond. Math. Soc. (five times), Lett. Math. Phys. (twice), Manuscripta Math., Math. Ann., Math Z. (three times), Mem. Amer. Math. Soc., Pacific J. Math. (twice), Proc. Amer. Math. Soc. (twice), Proc. Edinb. Math. Soc., Proc. Indian Acad. Sci. Math. Sci., Proc. Lond. Math. Soc., Quantum Topol. (ten times), Represent. Theory, Rev. Mat. Iberoam, Selecta Math. (N.S.), Springer nature books, Trans. Amer. Math. Soc. (five times), Theory Appl. Categ., Transform. Groups



Daniel Tubbenhauer (digital signature); June 29, 2025