

# CURRICULUM VITAE

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BORN DECEMBER 27, 1991

## CONTACT

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## EDUCATION AND ACADEMIA

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07/19 – today **Postdoctoral researcher**  
Research Group in Nonlinear Algebra of Prof. Bernd Sturmfels  
Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany

10/15 – 05/19 **Doctoral studies in Mathematics**  
Thesis: *Topological Computation of Stokes Data of Weighted Projective Lines*  
Advisors: Prof. Marco Hien and Prof. Maxim Smirnov  
University of Augsburg, Germany

10/13 – 07/15 **Master of Science with Honors** in Mathematics within the program *TopMath*  
Thesis: *From Turrittin–Levelt to the lower semi-continuity of families of  $\mathcal{D}$ -modules*  
Technical University of Munich, Germany

10/12 – 09/13 **Additional certificate: Elite Bachelor** in the programm *TopMath* of the *Elite Network of Bavaria*  
University of Augsburg/Technical University of Munich, Germany

10/10 – 08/13 **Bachelor of Science** in Mathematics, minor subject: Philosophy  
Thesis: *Irregularity and spectral norm of differential modules*  
University of Augsburg, Germany

## PUBLICATIONS AND PREPRINTS

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2021 **Nonlinear Algebra and Applications** (with P. Breiding, T. Çelik, T. Duff, A. Heaton, A. Maraj, L. Venturello, and O. Yürük). arXiv:2103.16300, 2021.

2021 **Combinatorial Differential Algebra of  $x^p$**  (with R. Ait El Manssour). arXiv:2102.03182, 2021.

2021 **Maximum Likelihood Estimation from a Tropical and a Bernstein–Sato Perspective** (with R. van der Veer). arXiv:2101.03570, 2021.

2020 **Algebraic Analysis of the Hypergeometric Function  ${}_1F_1$  of a Matrix Argument** (with P. Görlach and C. Lehn). *Beiträge zur Algebra und Geometrie*, November 2020.

2020 **Algebraic Analysis of Rotation Data** (with M. F. Adamer, A. C. Lőrincz, and B. Sturmfels). *Algebraic Statistics* 11(2):189–211, 2020.

2019/2021 **D-Modules and Holonomic Functions** (with B. Sturmfels). arXiv:1910.01395 [math.AG], 2019. To appear in the proceedings of the *Math+ Fall School in Algebraic Geometry*.

2021 **Topological computation of Stokes matrices of some weighted projective lines**. *Manuscripta mathematica* 164(3):327–347, 2021.

## TEACHING AND WORK EXPERIENCE

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12/2020 – today **Equal Opportunity Representative**  
Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany

- 09/15 – 06/19     **Scientific assistant** of Prof. Marco Hien at the University of Augsburg, Germany  
 ▷ Tutoring diverse lectures in Mathematics  
 ▷ Tutoring and organizing a help desk for students of Mathematics  
 ▷ Tutoring and organizing a study program for pupils
- 08/13 – 08/15     **Assistant in the project *Best MINT*** of the Bavarian State Ministry for Education, Science and the Arts at the University of Augsburg, Germany
- 08/12 – 09/12     **Intern** at *SGL Carbon* in Meitingen, Germany  
 Mathematical modeling of the extrusion of ceramic materials
- 10/11 – 07/13     **Scientific assistant** at the University of Augsburg, Germany  
 Tutoring lectures on Linear Algebra and Commutative Algebra

### SELECTED TALKS AND SCIENTIFIC ORGANIZING

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- 08/2021     **SIAM Conference on Applied Algebraic Geometry (AG21)**  
 Session: Differential Equations in Algebraic Geometry and Beyond  
 Invited talk: *D-Modules in (Algebraic) Statistics*  
 Texas A&M University
- 07/2021     **Workshop on Math of Data**  
 Talk: *Stable Invariants for Multipersistence Modules*  
 MPI MiS, Leipzig
- 07/2021     **Mathematical Congress of the Americas**  
 Session: Differential operators in algebraic geometry and commutative algebra  
 Invited talk: *D-Modules in (Algebraic) Statistics*  
 University of Buenos Aires
- 06/2021     **MEGA 2021**  
 Talk: *Combinatorial Differential Algebra of  $x^p$*   
 University of Tromsø – The Arctic University of Norway
- 04/2021     **Seminar on the Mathematics of Amplitudes**  
 Invited Talk: *MLE from a Tropical and a Bernstein–Sato Perspective*  
 IAS Princeton, MPI MiS Leipzig, and MPP Munich
- 02/2021     **Onlineseminar on Applied Algebra and Analysis**  
 Invited Talk: *MLE from a Tropical and a Bernstein–Sato Perspective*  
 TU Braunschweig and Osnabrück University
- 01/2021     **OSCAR rings in the new year**  
 Software presentation: Singular in OSCAR  
 MPI MiS, Leipzig
- 11/2020     **Workshop Computational Algebra 2020**  
 Invited Talk: *Algebraic Analysis of the Hypergeometric Function  ${}_1F_1$  of a Matrix Argument*  
 TU Kaiserslautern
- 09/2020     **Seminar on Nonlinear Algebra**  
 Talk: *Algebraic Tools for Topological Data Analysis*  
 MPI MiS, Leipzig
- 07/2020     **ICMS 2020 Session: Computational Algebraic Analysis**  
 Scientific organization together with Dr. Christoph Koutschan  
 TU Braunschweig

- 03/2020      **Seminar Number Theory and Algebraic Geometry**  
Invited talk: *D-modules: Linear PDEs from an algebraic perspective*  
KU Leuven
- 11/2019      **Seminar on Symbolic Computation**  
Invited talk: *Computational Algebraic Analysis*  
RICAM, Linz
- 11/2019      **Geometric Analysis Seminar**  
Invited talk: *D-modules and applications*  
Goethe University of Frankfurt
- 10/2019      **European Women in Mathematics: German Chapter Conference 2019**  
Talk: *Computational Algebraic Analysis*  
MPI MiS, Leipzig
- 09/2019      **Fall School: Varieties, Polyhedra, Computation**  
Exercise session accompanying a lecture series on *D-modules and holonomic functions* delivered by Prof. Bernd Sturmfels  
Berlin Mathematics Research Center
- 09/2019      **Seminar: Computing with D-modules II**  
Scientific organization of the seminar together with Prof. Christian Sevenheck  
Talk: *Probability distributions as holonomic functions*  
MPI MiS, Leipzig
- 08/2019      **Seminar: Computing with D-modules**  
Talk: *How to compute? Part 2: Plural*  
MPI MiS, Leipzig
- 05/2019      **Otto–Sturmfels-Day**  
Invited talk: *Algebraic Analysis: D-Modules and PDEs*  
MPI MiS, Leipzig
- 04/2019      **Workshop: D-modules and the Riemann–Hilbert-correspondence**  
Invited talk: *Riemann–Hilbert for D-modules arising from weighted projective lines*  
Humboldt University of Berlin

## SCHOLARSHIPS AND ACHIEVEMENTS

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- 09/16 – 05/19      **German Academic Scholarship Foundation**  
Doctoral scholarship
- 11/2015      **Hurwitz Society of the Technical University of Munich**  
Honoring for the Master's degree passed with distinction
- 10/12 – 09/15      **Max Weber-Program of the German Academic Scholarship Foundation**  
Scholarship
- 04/11 – 03/13      **Deutschlandstipendium**

## FURTHER QUALIFICATIONS

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- Language      ▷ **German** (native language)      ▷ **English** (fluent)  
                  ▷ **French** (advanced, level C1)      ▷ **Italian** (upper intermediate, level B2)
- Teaching      **Acquisition of the Certificate for Teaching in Higher Education of the Bavarian Universities**  
Diverse soft skill courses on rhetoric, voice training, moderation, team heading, mentoring students, etc. in the program *ProfiLehre*