AFFILIATION

- Simon Fraser University (SFU), October 2020 - present
Alan Mekler Postdoctoral Fellow
Host: Nils Bruin

FORMER AFFILIATION

- Leipzig University, November 2019 – October 2020
Research Fellow (Wissenschaftliche Mitarbeiterin)
Host: Silvia Schöneburg-Lehnert

- Max-Planck-Institute for Mathematics in the Sciences (MPI MIS)
November 2019 – October 2020
Guest Researcher
Host: Bernd Sturmfels

- Max-Planck-Institute for Mathematics in the Sciences (MPI MIS)
May 2018 – October 2019
Postdoctoral Researcher
Host: Bernd Sturmfels

- Institut de recherche mathématique de Rennes (IRMAR)
January 2015 – April 2018
Doctoral Researcher funded by Henri Lebesgue Centre
Hosts: Sylvain Duquesne, Christophe Ritzenthaler
Project: HAH - Hardware and Arithmetic for Hyperelliptic Curves Cryptography

EDUCATION

- **Ph.D. in Mathematics,** August 2018
University of Rennes 1, Rennes, France
Propriétés géométriques et arithmétiques éxplicites des courbes
Advisors: Christophe Ritzenthaler, Sylvain Duquesne

- **M.Sc. in Mathematics,** December 2014
Sabancı University, İstanbul, Turkey
A Drinfeld modular interpretation of an asymptotically
optimal tower of curves over finite fields
Advisors: Alp Bassa, Cem Güneri

- **B.Sc. in Mathematics,** 2012
İstanbul Bilgi University, İstanbul, Turkey

PUBLICATIONS AND PREPRINTS

11) **Nonlinear Algebra and Applications**;
   with P. Breiding, T. F. Duff, A. Heaton, A. Maraj,
       A. -L. Sattelberger, L. Venturello, O. Yürük
   - submitted to Numerical Algebra, Control and Optimization

10) **Numerical reconstruction of curves from their Jacobians**
   with Daniele Agostini, Demir Eken
   - *submitted to Mathematics of Computation*

9) **The Dubrovin threefold of an algebraic curve**
   with Daniele Agostini, Bernd Sturmfels; *to appear in Nonlinearity*

8) **Wasserstein Distance to Independence Models**
   with Asgar Jamneshan, Guido Montúfar, Bernd Sturmfels, Lorenzo Venturello
   - *Journal of Symbolic Computation* **104** *(2021) 855–873*

7) **Theta Surfaces**
   with Daniele Agostini, Julia Struwe, Bernd Sturmfels
   - *Vietnam Journal of Mathematics (2020), Special issue for Jürgen Jost's 65th birthday.*

6) **Optimal Transport to a Variety**
   with Asgar Jamneshan, Guido Montúfar, Bernd Sturmfels, Lorenzo Venturello
   - *Mathematical Aspects of Computer and Information Sciences, MACIS 2019,*
     Springer Lecture Notes in Computer Science 11989 (2020) 364-381

5) **On the Eigenpoints of Cubic Surfaces**
   with Francesco Galuppi, Avinash Kulkarni, Miruna S. Sorea
   - *Le Matematiche* **75** *(2020) 2 611–625*

4) **Tritangents and Their Space Sextics**
   with Avinash Kulkarni, Yue Ren, Mahsa Sayyary Namin
   - *Journal of Algebra* **538** *(2019) 290-311*

3) **Thomae-Weber Formula: Algebraic Computations of Theta Constants**
   - *International Mathematics Research Notices rnz302 (2019)*

2) **Non-Ordinary Curves with a Prym Variety of Low p-rank**
   with Yara Elias, Burçin Güneş, Rachel Newton, Ekin Ozman, Rachel Pries, Lara Thomas
   - *Women in Numbers Europe II* **11** *(2018) 117-158*

1) **Architecture Level Optimizations for Kummer based HECC on FPGAs**
   with Gabriel Gallin, Arnaud Tisserand;
   - *Progress in Cryptology – INDOCRYPT 2017* *(2017) 44-64*

ONGOING PROJECTS

- **On algebraic theta divisors and their connections to KP equation**
  with Daniele Agostini, John Little;
  - *in preparation* (a current version would be provided if requested)

- **Del Pezzo Surfaces of Degree 4-5 and Genus 5-6 curves** - with Rosa Winter

- **On Discrete Statistical Models** - with Selvi Kara, Gabriel Sosa

CODE

- **Julia** - Numerical reconstruction of algebraic curves
      -

- **Magma** - <u>Code</u> on computations of Thetanullwerte
  - <u>Code</u> for reconstruction of space sextics from their tritangents

- **SageMath** - <u>Code</u> for arithmetic on Kummer surfaces

GRANTS

- **Theta functions and their applications**, 10 pp (submitted)
  The manuscript would be provided if requested.

MISCELLANEOUS

- **A catalogue-book and catalogue-website project** based on the collection of historical
  mathematical models of Leipzig University (goes back to Felix Kelin, Sophus Lie)
  - **Coauthor + Editor**
  - Here is our **website** (under construction and in German)
  - The project aims to exhibit the mathematics behind all the 300 models,
  led by Silvia Schöneburg-Lehnert.
  - My focus is on the algebraic surfaces in the collection
  (The work would be presented if requested).

ORGANIZATION

- **Number Theory and Algebraic Geometry Seminar**
  - Organizer, with Nils Bruin
  - Zoom, October 2020 - present

- **Research Experience for Undergraduates**
  - in the organization team + leader of a project
  - planned for summer 2021

- **Uluslararası Cebirsel GEometri Neşesi - weekly online seminer series**
  - Organizer, with Alp Bassa, Özgür Esentepe, Ali Özgür Kişisel
  - Zoom, starting from 12 August 2020, Wednesday

- **Meetings on the Mathematical Model Collection of Leipzig University (2 sessions)**
  - Organizer, Zoom, 07 May 2020, 28 May 2020

- **Mathematical Aspects of Computer and Information Sciences 2019**
  - Program Committee Member, Istanbul/Turkey, 13-15 November 2019

- **Mini-Symposium on Riemann Surfaces in the SIAM Conference**
  - Organizer, with Daniele Agostini, Christian Klein & Emre Sertöz,
  Bern/Switzerland, 9-13 July 2019

- **Round Table Meeting: Women in Mathematics at MPI MiS**
  - Organizer, with Francesca Arici & Xianqing Li-Jost, Leipzig/Germany,
   November 2018 – March 2019

- **Seminar Series on Nonlinear Algebra**
  - Organizer, Leipzig/Germany, June 2018 – December 2018

- **Géométrie Algébrique en Liberté XXIV**
  - Local Organizer - İzmir/Turkey, June 2016

TALKS

- **Nonlinear Algebra and Applications**
  - METU Math Club seminars,
  - METU, Zoom, April 2021

- **Integrable Systems in Symbolic, Numerical and Combinatorial Algebraic Geometry**
  - Algebra, Geometry, and Combinatorics Seminar,
  - San Francisco State University, Zoom, April 2021

- **Integrable Systems in Symbolic, Numerical and Combinatorial Algebraic Geometry**
  - ODTÜ-BİLKENT Algebraic Geometry Seminar
  - Bilkent University, Zoom, March 2021

- **KP equation in Symbolic, Numerical and Combinatorial Algebraic Geometry**
  - Séminaire Théorie des Nombres
  - Université de Bordeaux, Zoom, March 2021

- **Group Cohomology**
  - Reading seminar on Brauer Groups
  - Simon Fraser University, Zoom, March 2021

- **Algebraic Curves, Computer Algebra, Integrable Systems**
  - University of Siegen - Mathematics Department, Zoom, November 2020

- **The Dubrovin threefold of an algebraic curve**
  - Quarantined Number Theory and Algebraic Geometry Seminar
  - Simon Fraser University, Zoom, June 2020

- **Algebraic Surfaces of Order 3**
  - Meetings on MaMo Leipzig, Zoom, May 2020

- **Theta Surfaces**
  - Antalya Algebra Days, Nesin Mathematics Village, May 2020 (postponed)

- **Lie's Double Translation Surfaces meet Theta Surfaces**
  - Nonlinear Algebra Seminar Online (NASO), Zoom, April 2020

- **Theta Surfaces**
  - Symposium for Women in Mathematics in Southern California, March 2020

- **Theta Surfaces**
  - Algebra Seminar, UCLA, March 2020

- **Algebraic Computations of Theta Constants**
  - 9th Swiss-French Workshop in Algebraic Geometry, January 2020

- **Cayley's Ruled Surface**
  - Vista Seminar, Leipzig University, December 2019

- **Algebraic Computations of Theta Constants**
  - Workshop Women in Algebra and Symbolic Computations, December 2019

- **Algebraic Computations of Theta Constants**
  - IMBM, Boğaziçi University, November 2019

- **Optimal Transport to a Variety**
  - Mathematical Aspects of Computer and Information Sciences,
    Gebze Technical University, November 2019

- **A Thomae-like Formula**
  - Oberseminar Algebra/Geometrie, University of Oldenburg, June 2019

- **Varieties**
  - Invitation to Nonlinear Algebra, MPI MiS, June 2019

- **Algebraic Computations of Theta Constants**
  - Charlotte's Web Research Talk, University of Southern California, April 2019

- **On p-adic Uniformization of Elliptic Curves**
  - preparatory event for Chow lectures, MPI MiS, October 2018

- **Computations of Thetanullwerte**
  - Seminar on Nonlinear Algebra, MPI MiS, May 2018

- **Arithmetic via Hyperelliptic Curves**
  - Graduate Student Seminar, University of Basel, November 2016

- **Weber's Formula**
  - Arithmetic properties of curves (Series of lectues),
    Barcelona Graduate School of Mathematics, April 2017
- **An Approach towards Weber's Formula**
  - Séminaire de géométrie et algébre effectives,
    University of Rennes 1 - IRMAR, May 2016

- **Some Model Theory as a Tool: Proof of Ax-Grothendieck Theorem**
  - Pampers" des jeunes chercheurs en géométrie,
    University of Rennes 1 - IRMAR, January 2016

- **A Drinfeld modular interpretation**
  - "Pampers" des jeunes chercheurs en géométrie,
    University of Rennes 1 - IRMAR, April 2015

TEACHING

- **Foundations of Analytical and Quantitative Reasoning**
  - Instructor - Simon Fraser University - Spring 2021

- **History and Basics of Mathematics**- Visiting Lecturer
  - Otto von Guericke University Magdeburg - January 28, 2021

- **Mentoring Demir Eken** (an undergraduate student at Bilkent University)
  - Numerical Approach to Schottky Problem - Summer 2020

- **Invitation to Nonlinear Algebra**
  - Lecturer - Nesin Mathematics Village - August 2020 (postponed)

- **Seminar Course on MaMo**- Lecturer - Leipzig University-Summer Term 2020

- **Mentoring Julia Struwe** (a master student at Leipzig University)
  - Theta Surfaces - 2019

- **Calculus** - Teaching Assistant - Sabancı University

- **Discrete Mathematics** - Teaching Assistant - Sabancı University

- **Linear Algebra** - Teaching Assistant - Sabancı University

- **Field Theory and Galois Theory** - Teaching Assistant - İstanbul Bilgi University

- **Complex Analysis** - Teaching Assistant - İstanbul Bilgi University

- **Group Theory** - Lecturer - Nesin Mathematics Village[1]

- **Graph Theory** - Lecturer - Nesin Mathematics Village

- **Combinatorics** - Lecturer - Nesin Mathematics Village

- **Real Analysis in one variable/ several variables** - Lecturer - Nesin Mathematics Village

- **Point-set Topology** - Lecturer - Nesin Mathematics Village

- **Elementary Number Theory** - Lecturer - Nesin Mathematics Village
- C_i **Fields** - Lecturer - Nesin Mathematics Village

- **Introduction to Drinfeld Modules** - Lecturer - Nesin Mathematics Village

- **Uniform Cell Decomposition of p-adic Numbers** - Lecturer - Nesin Mathematics Village

- **Linear Algebra** - Lecturer - Nesin Mathematics Village

- **Calculus** - Lecturer - Nesin Mathematics Village

OUTREACH

- **Tête à tête talks "In the Pursuit of Mathematics"**
  - Speaker, Moderator, Organizer (collective work) - Youtube - since April 2020

TEACHING AWARD

University Courses Teaching Assistant Incentive Award - Sabancı University

---

[1] The programs of all the acitivies in Nesin Mathematics village can be found at `https://nesinkoyleri.org/tum-etkinlikler/`