# Rafael Mohr

KU Leuven, Department of Computer Science
Celestijnenlaan 200A
3001 Leuven, Belgium

Email: rafaeldavid.mohr@kuleuven.be
Website: https://rafaeldavidmohr.github.io/

## Academic Positions

2025- **PostDoc**, KU Leuven, Applied Algebraic Geometry Group
2024-2025 **PostDoc**, Inria Saclay, MATHEXP team
2020-2024 **PhD student**, Sorbonne Université and RPTU Kaiserslautern-Landau

## Other Activities

2025 **Tutor** in computer science, École Polytechnique
2022-2024 **Software developer** for the computer algebra system `OSCAR`, RPTU Kaiserslautern-Landau
2021-2022 **Tutor** in mathematics and computer science, RPTU Kaiserslauten-Landau
2016-2020 **Tutor** in mathematics and computer science, Universität Leipzig

## Education

2020 **Diploma** in Mathematics, Universität Leipzig, GPA of 1.1
2014 **Abitur**, Altes Gymnasium Flensburg, GPA of 1.5

## Research Activity

### Publications

2025 **Wronski Pairs of Honeycomb Curves**
joint with Laura Casabella, Michael Joswig
*Journal of Symbolic Computation, MEGA 2024 Special Edition*

2025 **Computing Newton Polytopes of Eliminants**
joint with Yulia Mukhina
*ISSAC '25 Proceedings*

2025 **A Syzygial Method for Equidimensional Decomposition**
*Journal of Symbolic Computation*

2025 **Gröbner Bases for Polynomial Ideals and Applications**
joint with Christian Eder, Mohab Safey El Din
*The Computer Algebra System `OSCAR`. Algorithms and Examples.*

2024 **Computing Generic Fibers of Polynomial Ideals Using FGLM and Hensel Lifting**
joint with Jérémy Berthomieu
*ISSAC '24 Proceedings*

2023 **A Direttissimo Algorithm for Equidimensional Decomposition**
joint with Christian Eder, Pierre Lairez, Mohab Safey El Din
*ISSAC '23 Proceedings*

2023 **A Signature-Based Algorithm for Computing the Nondegenerate Locus of a Polynomial System**
joint with Christian Eder, Pierre Lairez, Mohab Safey El Din
*Journal of Symbolic Computation*

### Invited Talks

2025 **Polyhedral Elimination Techniques**
*Pascaline Seminar, ENS Lyon*

2025 **Polyhedral Elimination Techniques**
*Number Theory and Algebraic Geometry Seminar, KU Leuven*

2025 **Linearization in Polynomial System Solving: New Algorithms and Perspectives**
*Seminar of ECO team, Université de Montpellier*

2024 **Gröbner Basis Algorithms in Service of Algebraic Set Decomposition**
*DRN + EFI Conference '24*

2023 **Direttissimo Equidimensional Decomposition**
*SIAM AG '23*

### Organization

2025 **Weekly Reading Seminar "Gröbner Bases and Applications"**, *KU Leuven*
2025 **Mini-symposium "Software in Algebraic Geometry"**, *SIAM AG '25*
2023 **Workshop on Polynomial System Solving**, *MPI Leipzig*

## Skills

**Programming Languages**: `C`, `C++`, `Python`, `Java`, `Julia`
**Technical Skills**: Basic Linux system administration, version control, continuous integration
**Languages**: German (native), English (C1), French (B2)