

# Julian Bitterwolf

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## Education

- 2014 **MSc Mathematics**, *École Polytechnique & Université Paris Sud 11*, Palaiseau/Orsay, FR, avg. grade: 15.3/20.  
Program: "Mathematics: Analysis, Arithmetics and Geometry"
- 2015 **BSc Physics**, *Karlsruhe Institute of Technology*, Karlsruhe, DE, 1.3.  
Bachelor in Physics with minor in Business Administration. Thesis with the title "Path Integration via Infinitesimal Complex Time Phases" on instantons with supervisor Prof. J. Schmalian
- 2012-2013 **Erasmus Year**, *École Polytechnique*, Palaiseau.  
In the 3rd year of EP's mathematics program. Final presentations on representation theory and quantum groups
- 2009 **Abitur**, *Lessing-Gymnasium*, Karlsruhe, 1.4.  
Elective subjects: Physics and History

## Master thesis

- title **The Eilenberg-MacLane Theorem for Simplicial Sheaves**
- supervisor Prof. Dr. Fabien Morel, LMU München
- description In this work, I showed that the result  $H^n(X, M) \cong [X, K(M, n)]$ , linking homology and homotopy, does not only hold in the classical context where  $X$  is a simplicial set and  $M$  an abelian group with its Eilenberg-MacLane space  $K(M, n)$ , but also in the generalization of  $X$  as a simplicial sheaf and  $M$  as a sheaf of abelian groups.

## Experience

### Vocational

- 2016 **Lecturer: Preparatory course in physics for Civil Engineering**, *Karlsruhe University of Applied Sciences*, Karlsruhe, DE.  
Preparing and holding a week of introductory physics lectures for beginning CE students.
- 2015 **Lecturer: Preparatory course in physics for geodesy and transportation management**, *Karlsruhe University of Applied Sciences*, Karlsruhe, DE.
- 2009–2010 **Combat Signaller**, *Command Support Battalion 291 of the Bundeswehr*, Sigmaringen, DE, Obligatory military service in the German armed forces, including basic military training and training as an IT-soldier.

## Miscellaneous

- 2016 **Gap Year**, TH, LA, KH, MY, ID, SG.  
Travelling Asia, learning a lot about different cultures, life in challenging circumstances, extreme weather situations, and myself
- 2016 **Dive Master**, *Scuba Junkie Komodo*, Flores, ID.  
Six week internship program, leading to the PADI Dive Master certification which qualifies for working as diving group leader
- 2011–2015 **Secretary of Hector-Seminar-Alumni e.V.**, Heidelberg, DE.  
Being part of the association's board of this non-profit association meant, beneath being responsible for its bureaucratic duties, organising several events per year, like a visit at CERN or study information days for Gymnasium-graduates
- 2011–2012 **IT System Administrator**, for the research group *Number Theory and Algebraic Geometry*, *Institute of Algebra and Geometry*, *KIT*, Karlsruhe, DE.  
Maintaining the group's IT infrastructure, including group-wide OS updates and acquisition of hardware and introduction to the available systems for new staff.
- 2010–2011 **Tutor**, *Institute of Algebra and Geometry*, *KIT*, Karlsruhe, DE.  
Holding a tutorial accompanying the lecture "Linear Algebra and Analytic Geometry I" by Prof. D. Hug and Prof. W. Tuschmann.
- 2008 **Project leader on human flows measurement**, *Hector-Seminar*, Karlsruhe, DE.  
Conceptualizing, planning, organizing and executing a 5-month weekly project for 18 participants.

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## Languages

- German **native speaker**
- English **near native/fluent**
- French **very good command**

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## Computer skills

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|-----------------|---------------------|----------|--------------------|
| Programming     | C++, Python         | Graphics | Inkscape, GIMP     |
| Calculation     | MATLAB, Mathematica | Office   | LaTeX, LibreOffice |
| Theorem Proving | Isabelle, Lean      |          |                    |

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## Prizes, honours and extracurricular education

- 2012 – 2013 Deutschlandstipendium
- 2002 – 2009 Participant of the **Hector-Seminar**, a weekly seminar class on mathematics, computer science, natural science and technology, for selected highly gifted pupils.
- 2009 Second place in the regional "Jugend forscht"-competition with the chemistry project „Nitration of toluene – challenging poorly documented school book statements“
- 2007 Invited participant at a workshop on spacetime descriptions within the Deutsche Schülerakademie with a talk on gravitational waves
- 2006 First place in the competition "explore science: chain reaction" by the Klaus Tschira Foundation