

# Timo Sprekeler | Curriculum Vitae

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## Personal Details

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**Birth:** December 26, 1996 in Dortmund, Germany

**Citizenship:** German

**Address:** Mathematical Institute, Woodstock Rd, Oxford OX2 6GG, United Kingdom

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## Education

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### University of Oxford, Keble College

Oxford, UK

*DPhil in Mathematics*

10/17–Present

DPhil student in the EPSRC Centre for Doctoral Training in Partial Differential Equations

Research project: Finite element approximation of elliptic homogenization problems in nondivergence-form

Supervisors: Prof. Endre Süli (primary), Prof. Yves Capdeboscq (secondary)

### University of Cambridge, Trinity College

Cambridge, UK

*MASt in Mathematics* (Part III of the Mathematical Tripos)

10/16–07/17

Master of Advanced Study in Mathematics, grade: Distinction

Thesis: Deep variational models

Thesis Supervisor: Prof. Carola-Bibiane Schönlieb

### University of Dortmund

Dortmund, Germany

*B.Sc. in Mathematics*

10/13–08/16

Bachelor of Science in Mathematics with minor subject Physics, grade: 1.0 (highest, top student)

Thesis: Non-trivial solutions of a semilinear equation with critical Sobolev-exponent

Thesis Supervisor: Prof. Ben Schweizer

## Visits

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### Cantab Capital Institute for the Mathematics of Information (CCIMI)

Cambridge, UK

*Summer internship in the CCIMI within the University of Cambridge*

07/17–09/17

Research project: Regularised optimal transport for solving gradient flows.

Supervisors: Prof. Carola-Bibiane Schönlieb, Prof. José Antonio Carrillo de la Plata

## Academic Positions

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**10/20–Present:** Stipendiary Lecturer in Applied Mathematics, Keble College, University of Oxford

**01/16–07/16:** Undergraduate Research Assistant, Numerical Analysis group of Prof. Stefan Turek, University of Dortmund

## Academic Awards

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**2017–2021:** Clarendon Fund Scholarship and Keble College Sloane Robinson Scholarship

**07/2017:** Examination Prize and Senior Scholarship, Trinity College Cambridge

**11/2016:** Best B.Sc. Mathematics overall grade of year group, University of Dortmund

**2015–2016:** Deutschlandstipendium ('Germany Scholarship')

## Publications

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- Yves Capdeboscq, Timo Sprekeler and Endre Süli. *Finite element approximation of elliptic homogenization problems in nondivergence-form*, ESAIM Math. Model. Numer. Anal., 54(4):1221–1257, 2020.
- Dietmar Gallistl, Timo Sprekeler and Endre Süli. *Mixed finite element approximation of periodic Hamilton–Jacobi–Bellman problems with application to numerical homogenization*, accepted for publication in Multiscale Modeling and Simulation, 2021.
- Timo Sprekeler and Hung Vinh Tran. *Optimal convergence rates for elliptic homogenization problems in nondivergence-form: analysis and numerical illustrations*, submitted.  
<https://arxiv.org/abs/2009.11259>

## Talks

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**02/2021**<sup>†</sup>: Multi-scale Analysis: Thematic Lectures and Meeting, ICTS (MATHLEC-2021), India (online)

**06/2020**\*: LMS Scottish Numerical Methods Network "Multiscale & Multilevel Methods: Numerical Analysis and Applications", ICMS, UK (online)

**02/2020**\*: Inria–LJLL (Laboratoire Jacques-Louis Lions) Scientific Calculus Seminar, Sorbonne University, France

**09/2019**<sup>†</sup>: Chemnitz Finite Element Symposium, Mülheim an der Ruhr, Germany

**09/2018**\*: PDE CDT Summer School, University of Oxford, UK

**04/2018**\*: PDE CDT Spring School, University of Oxford, UK

**09/2017**\*: Cambridge Image Analysis Seminar, University of Cambridge, UK

**08/2017**\*: Post Masters Placement Presentation, University of Cambridge, UK

\*Invited talk, <sup>†</sup>contributed talk

## Teaching

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**Mathematical Institute, University of Oxford**

**Oxford, UK**

*Teaching Assistant and Tutor for the following courses:*

- B4.1: Functional Analysis I Michaelmas 2019
- B6.1: Numerical Solution of Differential Equations I Michaelmas 2019
- B6.2: Numerical Solution of Differential Equations II Hilary 2019
- CDT: Analysis of Partial Differential Equations Michaelmas 2018

- MMSC: Further Mathematical Methods Hilary 2019
- MMSC: Further Partial Differential Equations Hilary 2020
- MMSC: Numerical Solution of Differential Equations Michaelmas 2018

**Keble College, University of Oxford**

**Oxford, UK**

*Stipendiary Lecturer (2020/21) and College Tutor for the following courses:*

- Introduction to University Mathematics Michaelmas 2020
- A1: Differential Equations 1 Michaelmas 2020
- A6: Differential Equations 2 Hilary 2021
- ASO: Calculus of Variations Trinity 2019 & Trinity 2020
- ASO: Integral Transforms Hilary 2021
- M3: Introductory Calculus Michaelmas 2020
- M4: Constructive Mathematics Trinity 2020
- M5: Fourier Series and PDE's Hilary 2021
- M5: Multivariable Calculus Hilary 2020

Oxford terms: Michaelmas (Oct–Dec), Hilary (Jan–Mar), Trinity (Apr–Jun)

## Academic Responsibilities

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**2020–Present:** Referee for manuscripts submitted to Foundations of Computational Mathematics

**2018–Present:** Chaperoning of Undergraduate Admissions Interviews, Keble College Oxford

**11/2019:** Marking the Mathematics Admissions Test (MAT), Mathematical Institute, University of Oxford

**06/2019:** Script Checker for Undergraduate Exams, Mathematical Institute, University of Oxford

## Languages

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**German:** Native.

**English:** Fluent. Passed the IELTS test on C1 CEFR level. Student in the UK since 2016.

**French:** Intermediate. Passed the DELF B2 test (B2 CEFR level).

**Chinese:** Intermediate. Passed the HSK 3 test (B1 CEFR level).

## Computer Skills

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MS Office, L<sup>A</sup>T<sub>E</sub>X, MATLAB, C++, FreeFem++, FEniCS

## Additional Qualifications

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**2006–2020:** Member of the European Society for Memory Enhancement “MemoryXL”

*Participation in several Memory Championships. Notable results:*

- Team World Champion 2012,
- German Vice-Champion and North-German Champion 2008 (in age group)

**2016–Present:** Member of the Cambridge (2016/17) and Oxford University Badminton Club

*Representing the University in BUCS matches and in the annual varsity match*

**08/16–09/16:** Academic Development and Training for International Students

*Academic Skills Training Course, University of Cambridge Language Centre*