

# Curriculum vitae – Christian Johansson

## Personal details

**Full name** Hans Christian Johansson  
**Date of birth** 4 August 1985  
**Nationality** Swedish  
**Address** Department of Pure Mathematics and Mathematical Statistics  
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## Employment

09/2016 – present Herchel Smith Postdoctoral Research Fellow,  
DPMMS, University of Cambridge, UK

01/2015 – 07/2016 Member, School of Mathematics, Institute for Advanced Study,  
Princeton, USA

08/2014 – 12/2014 Postdoctoral Research Fellow, Mathematical Sciences Research  
Institute, Berkeley, USA

04/2013 – 07/2014 Senior Research Fellow, Mathematical Institute,  
University of Oxford, UK

## Fellowships and visiting positions

10/2016 – present College Research Associate, Clare College,  
University of Cambridge, UK

10/2013 – 07/2014 Nicholas Kurti Junior Research Fellow, Brasenose College,  
University of Oxford, UK

01/2012 – 03/2012 Scientific researcher, Thematic program on Galois representations  
Fields Institute, Toronto, Canada

## **Education**

- 09/2009 – 03/2013      PhD in Mathematics, Imperial College London, UK  
Advisors: Prof. Kevin Buzzard and Dr. Toby Gee  
Viva date: 6 June 2013.
- 10/2008 – 06/2009      Certificate of Advanced Study in Mathematics (Part III)  
Clare College, University of Cambridge, UK  
Distinction
- 10/2005 – 06/2008      BA Mathematics  
Clare College, University of Cambridge, UK  
First Class Honours all three years
- 08/2004 – 06/2005      Göteborg University, Sweden  
Mathematics 63 hp  
Mathematical Logic 37.5 hp  
All courses passed with VG (“pass with distinction”)

## **Teaching experience**

- 10/2017 – 12/2017      Supervisor, “Groups, Rings and Modules”, 2<sup>nd</sup> year undergraduate  
course, Clare College, University of Cambridge
- 10/2017 – 12/2017      Lecturer, “Algebraic Number Theory”, 4<sup>th</sup> year master's level course,  
University of Cambridge
- 10/2017 – 12/2017      Supervisor, “Linear Algebra”, 2<sup>nd</sup> year undergraduate course,  
Clare College, University of Cambridge
- 03/2017                      Project assistant, Arizona Winter School,  
Southwest Centre for Arithmetic Geometry, University of Arizona
- 01/2017 – 03/2017      Supervisor, “Analysis I”, 1<sup>st</sup> year undergraduate course,  
Clare College, University of Cambridge
- 10/2016 – 12/2016      Lecturer, “Local Fields”, 4<sup>th</sup> year master's level course,  
University of Cambridge
- 10/2016 – 12/2016      Supervisor, “Analysis II”, 2<sup>nd</sup> year undergraduate course,  
Clare College, University of Cambridge
- 01/2014 – 03/2014      Lecturer, “Adic spaces”, graduate course, University of Oxford

10/2013 – 12/2013	Class Tutor, “Introduction to Representation Theory”, 3 <sup>rd</sup> year undergraduate course, University of Oxford
10/2013 – 12/2013	Class Tutor, “Commutative Algebra”, 4 <sup>th</sup> year master's level course, University of Oxford
01/2010 – 03/2010	Marker of graded homework for 3 <sup>rd</sup> /4 <sup>th</sup> year undergraduate course “Algebraic Number Theory”, Imperial College London
06/2008 – 08/2008	Teaching assistant for a foundational course for students about to enter university, Göteborg University

**Publications and Preprints** (may be found on <https://www.dpmms.cam.ac.uk/~hcj24/>)

1. Classicality for small slope overconvergent automorphic forms on some compact PEL Shimura varieties of type C. **Math. Annalen.**, vol. **357(1)**, pp **51-88 (2013)**.
2. A remark on a conjecture of Buzzard-Gee and the cohomology of Shimura varieties. **Math. Research Letters**, vol. **20(2)**, pp **279-288 (2013)**.
3. A trace formula approach to control theorems for overconvergent automorphic forms. **Manuscripta Mathematica**, vol. **151(1)**, pp **19-48 (2016)**.
4. A canonical dimension estimate for non-split semisimple p-adic Lie groups. With Konstantin Ardakov. **Representation Theory**, vol. **20**, pp **128-138 (2016)**.
5. On the Sato-Tate conjecture for non-generic abelian surfaces. With an appendix by Francesc Fite. **Transactions of the A.M.S.**, vol. **369(9)**, pp **6303-6325 (2017)**.
6. Overconvergent modular forms and perfectoid Shimura curves. With Przemyslaw Chojecki and David Hansen. **Documenta Mathematica**, vol. **22**, pp **191-262 (2017)**.
7. Irreducible components of extended eigenvarieties and interpolating Langlands functoriality. With James Newton. **To appear in Math. Research Letters**.
8. Extended eigenvarieties for overconvergent cohomology. With James Newton. Submitted.
9. Local Langlands correspondence in rigid families. With James Newton and Claus Sorensen. Submitted.
10. Parallel weight two points on Hilbert modular eigenvarieties and the parity conjecture. With James Newton. Submitted.
11. On subquotients of the étale cohomology of Shimura varieties. With Jack Thorne. Submitted.
12. Shimura varieties at level  $\Gamma_1(p^\infty)$  and Galois representations. With Ana Caraiani, Daniel Gulotta, Chi-Yun Hsu, Lucia Mocz, Emanuel Reinecke and Sheng-Chi Shih.

## **Organization and service**

- 09/2015 – 06/2016 Organizer, IAS/Princeton University Number Theory Seminar
- 01/2014 – 07/2014 Organizer, Oxford Number Theory Seminar
- 10/2013 Organizer, “Number Theory Day”, one-day internal conference, University of Oxford
- Journal referee: Algebra and Number Theory, Forum of Mathematics Sigma, International Mathematical Research Notices, Mathematical Research Letters, Women in Numbers

## **Awards and scholarships**

- Yael Dowker Centenary Prize, Imperial College London 2013
- Owst Prize in Mathematics, Clare College 2008
- Scholarship from Felix Neuberghs resestipendiefond, 2006-2009  
Total value 91,000 SEK

## **Invited talks**

- 09/2017 Stockholm University, Algebra and Geometry Seminar
- 09/2017 Summer School on Modular Forms, University of Padova
- 06/2017 Meeting of the Catalan, Spanish and Swedish Mathematical Societies, Number Theory Workshop, University of Umeå
- 05/2017 University of Amsterdam, Arithmetic and Algebraic Geometry Seminar
- 02/2017 “p-adic methods for Galois representations and modular forms”  
University of Barcelona
- 02/2107 University of Cambridge, Number Theory Seminar
- 02/2017 University College London, London Number Theory Seminar
- 10/2016 University of Cambridge, Algebra and Representation Theory Seminar
- 01/2016 Boston University, Number Theory Seminar
- 10/2015 Johns Hopkins University, Number Theory Seminar
- 10/2015 University of Chicago, Number Theory Seminar
- 10/2015 Northwestern University, Number Theory Seminar

05/2015 Chalmers University of Technology, Number Theory Seminar  
10/2014 MSRI, Postdoctoral Seminar  
10/2014 Stanford University, Number Theory Seminar  
06/2014 Adam Mickiewicz University, Poznan, Number Theory Seminar  
02/2014 "Frobenius distributions on curves", CIRM Luminy  
11/2013 London-Paris Number Theory seminar, Institut de Mathématiques de Jussieu  
09/2013 University of Bristol, Heilbronn Seminar  
06/2013 "Géométrie Arithmétique p-adique", ENS Lyon  
04/2013 Ecole Normale Supérieure de Lyon, Number Theory Seminar  
03/2013 British Mathematical Colloquium, University of Sheffield  
Number Theory Workshop  
01/2013 University of Oxford, Number Theory Seminar  
10/2012 University of Warwick, Number Theory Seminar  
10/2012 University of Cambridge, Number Theory Seminar  
06/2012 King's College London, London Number Theory Seminar

### **Language skills**

English (fluent)  
Swedish (native)  
French (basic)