

# Aleksander Doan

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## EMPLOYMENT

2025—        **University College London**, Associate Professor of Mathematics  
2022—2025    **University College London**, Lecturer in Mathematics  
2019—2025    **University of Cambridge**, Junior Research Fellow of Trinity College  
2019—2022    **Columbia University**, Simons Society Junior Fellow

## EDUCATION

2014—2019    **Stony Brook University**, PhD in Mathematics. Advisor: Simon Donaldson  
2013—2014    **University of Cambridge**, Part III of the Mathematical Tripos  
2009—2013    **University of Warsaw**, BA in Mathematics

## GRANTS

2021        National Science Foundation grant DMS-2104919 (\$158,856)

## AWARDS, FELLOWSHIPS, OTHER FUNDING

2024        Isaac Newton Institute funding: UK Differential Geometry Network (with H. Nguyen)  
2024        MATH+ Visiting Scholar, Humboldt-Universität zu Berlin  
2023        Visiting Scholar, University of Science and Technology of China  
2022        Research Member, Simons–Laufer Mathematical Sciences Institute, Berkeley  
2019—       Junior Research Fellowship, Trinity College, University of Cambridge  
2019—2022   Simons Society Junior Fellowship  
2019        Stony Brook University President’s Award to Distinguished Doctoral Students  
2019        Department Award for Outstanding Research by a PhD Student, Stony Brook University  
2017—2019   Funded by the Simons Collaboration on Special Holonomy  
2013—2014   Trinity College Studentship in Mathematics, University of Cambridge

## PAPERS

2025        Pseudo-holomorphic curves with a fixed complex structure in positive symplectic manifolds  
              with A. Cela, [arXiv:2505.13120](https://arxiv.org/abs/2505.13120)  
2024        Chambered invariants of real Cauchy–Riemann operators  
              with T. Walpuski, [arXiv:2410.21057](https://arxiv.org/abs/2410.21057)  
2023        Equivariant Brill–Noether theory for elliptic operators and super-rigidity  
              with T. Walpuski, *Forum of Mathematics, Sigma*, 11, E3 (2023)

## PAPERS (CONTINUED)

- 2023 Counting embedded curves in symplectic 6-manifolds  
with T. Walpuski, *Commentarii Mathematici Helvetici* 98 (2023), no. 4
- 2022 Holomorphic Floer theory and the Fueter equation  
with S. Rezchikov, [arXiv:2210.12047](#)
- 2021 The Gopakumar–Vafa finiteness conjecture  
with E. Ionel, T. Walpuski, [arXiv:2103.08221](#)
- 2021 Castelnuovo’s bound and rigidity in almost complex geometry  
with T. Walpuski, *Advances in Mathematics*, 379 (2021)
- 2021 On the existence of harmonic  $\mathbb{Z}/2$  spinors  
with T. Walpuski, *Journal of Differential Geometry*, 117(3): 395-449 (2021)
- 2020 Deformation theory of the blown-up Seiberg–Witten equation in dimension three  
with T. Walpuski, *Selecta Mathematica*, 26, 48 (2020)
- 2019 On counting associative submanifolds and Seiberg–Witten monopoles  
with T. Walpuski, *Pure and Applied Mathematics Quarterly*, 15.4 (2019)
- 2019 Seiberg–Witten monopoles with multiple spinors on a surface times a circle  
*Journal of Topology*, 12 (2019), No. 1, 1–55
- 2018 Adiabatic limits and Kazdan–Warner equations  
*Calculus of Variations and PDE*, 57:124 (2018)

## INVITED CONFERENCE TALKS

- 2025 *Symposium on Geometry in Celebration of Eugenio Calabi’s 100th Birthday*, IGP Hefei
- 2025 *Geometric Moduli Spaces: Rigidity, Genericity, Stability*, ICMS Edinburgh
- 2024 *Special Riemannian Geometries in Dimensions 6, 7, 8*, CRM Montréal
- 2023 *Symplectic Geometry, Low Dimensional Topology, and Quantum Fields*, University of Oxford
- 2023 *Pacific Rim Complex and Symplectic Geometry Conference*, Qingtian
- 2023 *Symplectic Topology Workshop*, Imperial College London
- 2022 *New Four-Dimensional Gauge Theories*, SLMATH Berkeley
- 2021 *Rutgers Geometric Analysis Conference*, Rutgers University
- 2020 *Oxford–London Gauge Theory Assembly*, University of Oxford
- 2020 *Geometry and Analysis of Moduli Spaces*, Imperial College London
- 2019 *Novel Vistas on Vortices*, Simons Center
- 2019 *Third Annual Meeting of the Simons Collaboration on Special Holonomy*, New York
- 2018 *Special Metrics and Gauge Theory*, Instituto de Ciencias Matemáticas, Madrid
- 2018 *Gauge Theory and Special Holonomy*, Imperial College London
- 2017 *Special Holonomy: Progress and Open Problems*, Simons Center
- 2017 *Gauge Equations, Geometry, and Strings*, Instituto de Ciencias Matemáticas, Madrid
- 2016 *Recent Developments in the Mathematical Study of Gauge Theory*, Simons Center

## INVITED SEMINAR TALKS

2024	Humboldt University, Columbia University, University of Oxford, Imperial College London
2023	University of Cambridge, King's College London, University of Southampton (colloquium), University of York, University of Edinburgh, Trinity College Cambridge
2022	Institute for Advanced Study, Stanford University, University of Wisconsin, Michigan State University (colloquium), University of S California (colloquium), Rutgers University (colloquium)
2021	Fields Institute, University of Oregon, Columbia University, Texas A&M University, UC Santa Barbara, University of Chicago, Western Hemisphere Symplectic Seminar
2020	Stanford University, University of Chicago, Institute for Advanced Study, Michigan State Univ.
2019	Duke University, Massachusetts Institute of Technology, Columbia University, Peking University, National Cheng Kung University (colloquium), Rutgers University, University of Rochester
2018	Princeton University, Harvard University, Stanford University, UC Berkeley, Brandeis University, City University of New York, Michigan State University
2017	Massachusetts Institute of Technology, Duke University, Stony Brook University, Institute of Mathematical Sciences Hong Kong

## TEACHING

2024	<i>Measure Theory</i> , University College London
2024	<i>Mathematical Methods 3</i> (tutorials), University College London
2023	<i>Mathematics for Science 2</i> , University College London
2023	<i>Mathematical Methods 1 &amp; 2</i> (tutorials), University College London
2023	<i>Part II Geometry</i> (tutorials), University of Cambridge
2023	<i>Gauge Theory</i> (graduate summer course), Chinese University of Science and Technology
2022—	<i>Topics in Geometry</i> (one of several lecturers), LSGNT PhD programme
2022	<i>Mathematics for Science 2</i> , University College London
2022	<i>Analysis 1</i> (tutorials), University College London
2021	<i>Ordinary Differential Equations</i> , Columbia University
2019	<i>Gauge Theory</i> (graduate summer course), Peking University
2014—2019	<i>Calculus 1 &amp; 2</i> , <i>Analysis 1</i> , <i>History of Mathematics</i> (tutorials), Stony Brook University

## STUDENTS

2023—	Elvar Wang Atlason (PhD)
2023—	Brad Wilson (PhD)
2021—2025	Emily Windes (PhD, coadvised)
2024—2025	Xander Povey (PhD first year project)
2024—2025	Yichen Zhang (PhD first year project)
2023—2024	Maartje Wisse (PhD first year project)
2024—2025	Chris Srsen (MSci)
2023—2024	Clementina Saggini (MSci)

## DEPARTMENTAL ROLES

2024—	Organizer of the <i>UCL Geometry Seminar</i>
2024—	Organizer of the <i>Brussels–London Geometry Seminar</i>
2024—	Organizer of the <i>Geometry Reading Seminar</i> for PhD students
2023—2025	PhD admissions for the London School of Geometry and Number Theory
2023—	Member of the research committee
2024	Designed new courses <i>Manifolds</i> and <i>Riemann Surfaces</i> to launch in 2025/26
2023—2024	Member of the workgroup for redesigning UCL geometry curriculum

## SERVICE

2024	Scientific committee of the <i>Geometry &amp; Topology Conference</i> , Qingtian
2024—2025	Mentor for the In2research programme for undergraduate students
2022—2025	PhD student mentoring programme, Trinity College, University of Cambridge
2022	US National Science Foundation grant panel
2022	Organizer of <i>Introductory Workshop on Gauge Theory</i> , SLMATH Berkeley
2020	Organizer of <i>Geometry and Analysis of Moduli Spaces</i> , Imperial College London
2019—2023	Governing Body of Trinity College, University of Cambridge