

# Gautam Chaudhuri

## *Curriculum Vitae*

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My research interests lie in differential geometry, algebraic geometry, and mathematical physics with a focus on moduli of topological solitons and Kähler geometry.

## EDUCATION

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**PhD Candidate**, *University of Leeds* *Feb 2022–present*

Supervisors: Prof. Martin SPEIGHT, Dr. Derek HARLAND.  
Candidacy transfer passed: Jan 2023  
Expected completion date: Oct 2025

**Msci Mathematics**, *Imperial College London* *Oct 2017–Jun 2021*

Upper Second Class Honours

## PROJECTS

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**MSci project**, *Introduction to Seiberg-Witten theory* *Jul 2020–Jun 2021*

Studied Seiberg-Witten theory and some of its applications. Final year research project supervised by Dr. Steven SIVEK, Imperial College London.

**Reading project**, *Energy estimates of the wave equation in Minkowski space* *Jul–Aug 2019*

Studied how geometric energy estimates bound the decay behaviour of solutions to the wave equation. Short reading project supervised by Dr. Christopher KAUFFMANN, Imperial College London.

## TALKS

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**The Geodesic Approximation and the  $L^2$ -geometry of Vortex Moduli Spaces** *Mar 2024*

Delivered at the MaPLe seminar, University of Leeds

**An Introduction to Vortices** *Dec 2022*

Delivered at the Pure PGR seminar, University of Leeds

**Characteristic classes and (another) proof of the Hairy Ball theorem** *Feb 2021*

Delivered at the Imperial College Undergraduate Colloquium, Imperial College London

## ATTENDED WORKSHOPS AND CONFERENCES

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- VBAC Workshop – Recent Applications to the Geometry of Moduli Spaces**,  
*Universität Duisburg-Essen, Essen* Aug 2023
- Sheffield GLEN – Derived Categories, Hodge theory and Singularities**, *University of Sheffield, Sheffield* Jun 2023
- Oxford-London Gauge Assembly III**, *University College London, London* Nov 2022
- Gauged Maps, Vortices and Their Moduli**, *SwissMAP Research Station, Les Diablerets* Aug 2022
- Geometric Models of Nuclear Matter**, *University of Kent, Canterbury* Jul 2022
- SIG X**, (*virtual attendee*) *Jagiellonian University, Kraków* Jun–Jul 2022

## TEACHING

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### UNIVERSITY OF LEEDS

- **Tutoring, Marking:** MATH1400 Modelling with Differential Equations Spring 2024
- **Tutoring, Marking:** MATH1060 Introductory Linear Algebra Spring 2024
- **Workshops, Marking:** MATH0394 Foundation Pure and Applied Mathematics Autumn 2023
- **Marking:** MATH2017 Real Analysis Spring 2023
- **Tutoring, Marking:** MATH1025 Number Systems Autumn 2022

## AWARDS AND SCHOLARSHIPS

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- EPSRC Studentship**, *Geometry and Dynamics of Topological Solitons* Feb 2022–present  
Fully funded studentship renewable annually for a maximum of 3 years

## ACTIVITIES

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- **Organiser:** University of Leeds SoM PGR Conference Jun 2023
- **Organiser:** Warwick Imperial Conference (WIMP) Jan 2020–Mar 2021
- **Organiser:** Imperial College UG Colloquium Sep 2018–Mar 2021
- **Webmaster:** Imperial College Mathematics Competition and MathSoc Sep 2019–Aug 2020

## SKILLS

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- **Programming languages:** Python (proficient), including experience with sage, sympy, numpy, and matplotlib. Haskell (familiar).
- **Development tools:** Git (proficient), mercurial, shell dialects (proficient with bash and zsh), podman, GitLab CI/CD, pipenv, poetry, unittest, mypy.
- **DTP and Typesetting:** HTML/CSS (proficient),  $\LaTeX$  (proficient, including Lua $\TeX$  and TikZ), MathML.
- **Server administration:** Linux (proficient with Fedora and RHEL based systems, experience with Debian and Arch), web servers (nginx), firewalls (iptables and firewalld), security and access controls (PAM and SELinux).