










# Lewis Napper

 15 Randalls Crescent, Leatherhead, Surrey, UK, KT22 7NP  
 (+44) 07655504377  
 [lewis.napper@surrey.ac.uk](mailto:lewis.napper@surrey.ac.uk)  
 <https://lewisn3142.github.io/>




## Education

- 2021 – . . . . .  **Ph.D. Mathematics, University of Surrey.**  
Thesis: *Monge–Ampère Geometry and Vortices.*  
Supervisors: [Dr. M. Wolf](#) and [Prof. I. Roulstone](#).
- 2017 – 2021  **M.Math. 1st class (hons) Mathematics, University of Surrey.**  
Thesis: *Algebraic Bethe Ansatz for  $\mathfrak{su}(2)$  Spin Chains and Beyond.*  
Supervisors: [Prof. A. Torrielli](#) and [Dr. A. Prinsloo](#).  
Average grade: 98%
- 2010–2017  **Therfield Secondary School and Sixth Form**  
A-level: 3 A\*, 1 A (*plus 1 A at AS level*).  
GCSE: 9 A\* *including English and German Language*, 3 A, 1 B  
Other: D\*2 Cambridge Nationals ICT, A FSMQ Additional Mathematics

## Employment History

- 2019 – . . . . .  **Teaching Assistant, University of Surrey**  
– Supervised undergraduate MATLAB and R-Studio programming labs for Statistics and Numerical Methods modules. Tasks included content delivery and debugging student code.  
– Marked coursework for multiple undergraduate modules, providing students with clear and concise feedback.
- 2019–2020  **Undergraduate Researcher, University of Surrey**  
– A London Mathematical Society funded research bursary supervised by [Dr. J. Grant](#), studying the synthetic Lorentzian framework of general relativity.  
– Produced a report and seminar presentation which led to two academic papers.




## Research Publications

- 1 T. Beran, J. Harvey, **L. Napper**, and F. Rott, “A Toponogov globalisation result for Lorentzian length spaces,” *Preprint*, 2023.  DOI: [10.48550/arXiv.2309.12733](https://doi.org/10.48550/arXiv.2309.12733).
- 2 T. Beran, **L. Napper**, and F. Rott, “Alexandrov’s Patchwork and the Bonnet–Myers theorem for Lorentzian length spaces,” *Preprint*, 2023.  DOI: [10.48550/arXiv.2302.11615](https://doi.org/10.48550/arXiv.2302.11615).
- 3 **L. Napper**, I. Roulstone, V. Rubtsov, and M. Wolf, “Monge–Ampère Geometry and Vortices,” *Preprint*, 2023.  DOI: [10.48550/arXiv.2302.11604](https://doi.org/10.48550/arXiv.2302.11604).




# Skills

---

## Software Skills

- Coding          MATLAB, Mathematica, R-Studio, and Python to a moderate level.
- Web Dev        HTML, CSS, JavaScript, and JQuery.
- Other            Microsoft Office Suite (Word, Excel, Powerpoint),  $\text{\LaTeX}$  typesetting and presentations, Adobe Photoshop, Affinity Serif Suite.




## Interpersonal Skills

- Report Writing        Learnt to integrate reports into concise, co-authored projects during a Professional Skills module at university and my Ph.D.
- Public Speaking        Developed presentation skills speaking to a wide range of audiences, from students to specialists. See [my website](#) for sample slides.
- Customer Relations        While working as a customer service assistant prior to university (2016–2017), my personal assistance was often requested due to the accuracy and efficiency with which I resolved customer requests.




# Select Experience

---

## Awards and Achievements

- 2018          **WorldQuant Championships** Part of the Surrey team for the WorldQuant Championships, for which I learnt WebSim and reached the regional final.
- 2017          **Surrey Merit Scholarship** Scholarship awarded to undergraduate students at the University of Surrey entering with exceptional A-level grades.
- 2017–2021        **Mathematics Department Prize for Excellence** Annual award for the best performance in a year of an undergraduate/master's degree.

## Activities

- Work Experience        1 week of work experience at MatOrtho Orthopaedic Engineering, UK (2017) including SolidWorks CAD training.
- Societies              Member of the Surrey Film Society and academic secretary of the Surrey Maths Society, for which I organised seminars and produced updated graphic design.
- Arts                     Presented art at the Surrey Youth Voice Awards and at my Sixth Form art festival, accompanying the latter with instrumental guitar playing.

# References

---

**Prof. Ian Roulstone**  
Professor of Mathematics,  
University of Surrey,  
[i.roulstone@surrey.ac.uk](mailto:i.roulstone@surrey.ac.uk)

**Prof. Alessandro Torrielli**  
Professor of Mathematics,  
University of Surrey,  
[a.torrielli@surrey.ac.uk](mailto:a.torrielli@surrey.ac.uk)