

# JULIUS NATHAN SORRAL VILLAR, BA, MMath

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## Education

### DPHil in Mathematics, University of Oxford

Sep 2022-Present

- Member of the **EPSRC CDT Mathematics of Random Systems: Analysis, Modelling and Algorithms**.
- Supervised by **Prof. Dmitry Beliaev**. Specialising in **Smooth Gaussian Fields and Percolation** within the Stochastic Analysis group.
- **Courses:** Function Spaces and Distribution Theory. Foundations of Data Science. Foundations of Stochastic Analysis. Theories of Deep Learning. Simulation Methods and Stochastic Algorithms. Advanced Topics in Stochastic Processes. Advanced Topics in Stochastic Analysis and Control. Random Matrix Theory. Stochastic Analysis and PDEs. Statistical Physics Models in High Dimensions.

### MMath in Mathematics, University of Cambridge

Oct 2021-Jun 2022

- **Passed with Distinction** (*Overall Grade: 81/100*), specialising in Probability, Mathematical Finance and Statistics.
- **Part III Essay:** 'Local Sets of the Two-Dimensional Gaussian Free Field', supervised by Dr. Lukas Schoug (*Grade: 90/100*).
- **Courses:** Stochastic Calculus and Applications (*92/100*), Schramm-Loewner Evolutions (*86/100*), Modern Statistical Methods (*73/100*), Advanced Financial Models (*72/100*), Advanced Probability (*71/100*), Information Theory, Mixing Times of Markov Chains, Percolation and Related Topics, Quantum Field Theory, Infinite Groups.

### BA in Mathematics, University of Cambridge

Oct 2018-Jun 2021

- **First Class Honours** in Part II (*Third Year: 72/100*) and Part IA (*First Year: 71/100*). Predicted First Class Honours in Part IB (*Second Year*); no official class awarded in Part IB due to the COVID-19 pandemic.
- **Representative Sample of Courses:** Applied Probability, Mathematics of Machine Learning, Statistical Modelling, Stochastic Financial Models, Mathematical Biology, Probability and Measure, Cosmology.

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## Work Experience

### Teaching at the University of Oxford

Oct 2022-Present

- **Class Tutor:** A4 Integration (2024, Revision Classes), B8.4 Information Theory (2023). **Teaching Assistant:** A4 Integration (2024), B8.4 Information Theory (2022, 2023), B8.3 Mathematical Models of Financial Derivatives (2023).

### Summer Internship at Allianz Global Corporate & Specialty (AGCS) Allianz Risk Transfer

Aug-Sep 2021

- A 9-week remote internship at Allianz Risk Transfer, expanding on projects I had started in the previous year and starting new ones, and gaining experience with using Microsoft Excel, VBA, SQL, R and the Bloomberg Terminal.

### Summer Internship at AGCS Allianz Risk Transfer

Jul-Aug 2020

- An 8-week remote internship at Allianz Risk Transfer, primarily developing tools to aid the risk modelling and pricing process for underwriters and analysts, while learning more about the industry. I worked primarily using Microsoft Excel, VBA and SQL.

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## Leadership and Committee

### Cambridge Faculty of Mathematics Board Member, Graduate Student Representative

Nov 2021-Jun 2022

- Attended Faculty Board meetings, to act as a point of contact between the two Maths departments (DAMTP & DPMMS) and the student body, working alongside two undergraduate student representatives.

### Cambridge Faculty of Mathematics Student Ambassador

Feb 2019-Jun 2022

- Acted as a point of contact and student representative for outreach initiatives within the faculty of Mathematics for the university.

### The Archimedean, Publicity Officer

Mar 2020- Apr 2021

- Managed the social media for the Archimedean (the official maths society for the University of Cambridge), sent weekly emails that detail upcoming talks and social events, and created graphics for promotional material.

### Trinity Hall JCR Committee, International Officer

Feb 2019- Feb 2020

- Represented the college's international student community, and helped organise college and university-wide events such as Freshers' Week.

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## Skills

### Programming

- **Advanced Proficiency:** Visual Basic (*Excel VBA*). MATLAB. SQL.
- **Intermediate Proficiency:** Python (*Pandas, Tensorflow, Keras, Seaborn*). R (*Shiny*). Javascript. Java.

### Design and Graphics

- **Advanced Proficiency:** Adobe Creative Cloud (*Illustrator, Photoshop, Lightroom, InDesign*). LaTeX.
- **Intermediate Proficiency:** HTML & CSS.

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## Scholarships and Grants

### EPSRC CDT Mathematics of Random Systems Studentship

2022

- Includes full coverage of tuition fees and a stipend.

### Trinity Hall Bateman Scholarship

2019, 2021, 2022

- Awarded for achieving First Class Honours in Part IA and Part II, and Distinction in Part III, of the Mathematical Tripos, respectively.

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## Other Interests

Badminton. Boxing. Chess. Crosswords. Graphic Design. Knitting. Running. Video Games.