

# Enda Carroll

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## Personal Profile

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I recently completed my PhD research at University College Dublin which was funded by the Irish Research Council. My research focused on studying the dynamics of the Fourier phases in models for turbulent flows with the aim of understanding the mechanism underpinning the phenomenon of intermittency in such flows. I have an expertise in nonlinear dynamics, fluid mechanics and high performance and scientific computing. I am self-motivated, hard-working and thrive on new intellectual experiences.

## Awards & Scholarships

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- Awarded an EU Science Scholarship by University College Dublin to complete my M. Sc. in Data and Computational Sciences. (€ 3,500) 2016
- Successfully secured Government of Ireland Postgraduate funding awarded by the Irish Research Council to complete my PhD, grant number: GOIPG/2018/2653. (€ 96,000) 2018 - Mar 2023

## Publications

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- Minimal Phase-Coupling Model for Intermittency in Turbulent Systems*  
Arguedas-Leiva, J. A. **Carroll, E.**, Biferale, L., Wilczek, M., Bustamante, M. D. (Aug 2022)  
Published: <https://doi.org/10.1103/PhysRevResearch.4.L032035>
- A Batched GPU Methodology for Numerical Solutions of Partial Differential Equations*  
**Carroll, E.**, Gloster, A., Bustamante, M. D., Ó'Náirigh, L. (July 2021)  
[Submitted.](#)
- Synchronization and Enhanced Intermittency in the Enstrophy Cascade of 2D Navier-Stokes Turbulence*  
**Carroll, E.**, Bustamante, M. D.  
[In Preparation.](#)
- Fourier Phase Dynamics and Intermittency in a Minimal Shell Model for Turbulence*  
**Carroll, E.**, Bustamante, M. D.  
[In Preparation.](#)

## Contributed Talks / Workshops (Selection)

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- 14th European Fluid Mechanics Conference** Sept 2022  
*A minimal phase-coupling model for intermittency in turbulent systems* Athens
- Dynamic Days Europe Conference** Aug 2022  
*A minimal phase-coupling model for intermittency in turbulent systems* University of Aberdeen
- OxML 2022: Oxford Machine Learning Summer School** Aug 2022  
*ML Fundamentals and ML for Finance* University of Oxford

## Outreach

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- Vice-President - SIAM-IMA Dublin Area Student Chapter** 2021-Mar 2023  
Previously held the position of Vice-President of the [student chapter](#) I co-founded.
- President - SIAM-IMA Dublin Area Student Chapter** 2020-2021  
Previously held the position of President of the [student chapter](#) I co-founded.
- Organized - 7th Annual SIAM Irish Student Chapter Conference** Dec 2020  
Organized the [virtual conference](#).
- Co-founded - SIAM-IMA Dublin Area Student Chapter** Jan 2020  
Co-founded a [student chapter](#) to promote and incubate collaboration in applied maths, stats and computational research amongst students in the Dublin area. We host seminars, industry talks, journal clubs and run social/quizz nights for students studying/research maths and stats.

## Education

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2018- OCT 2023	<b>Ph.D., Applied and Computational Mathematics</b> <b>University College Dublin</b> <i>Thesis: Fourier Phase Synchronization in Minimal Models for Turbulence</i> Supervisor: <a href="#">Assoc. Prof. Miguel Bustamante</a>	
2016-2017	<b>M. Sc. Data and Computational Science</b> <b>University College Dublin</b> <i>M. Sc. Thesis: The Dynamics of Burgers Equation</i> Supervisors: <a href="#">Assoc. Prof. Miguel Bustamante</a> & Assoc. Prof. Edward Cox	<b>First Class Honours</b>
2013-2016	<b>B. Sc. Financial Mathematics</b> <b>University of Limerick</b> <i>B. Sc. Thesis: Power Law Distributions and Stock Market Returns</i> Supervisors: <a href="#">Prof. James Gleeson</a>	<b>First Class Honours</b>

## Work Experience Highlights

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### Professional

SEPT 2017 -	<b>Data Scientist - Rengeneron Pharmaceuticals, Limerick, Ireland</b>
SEPT 2018	My role was to support the implementation and expansion of the company's <i>In-Process Control</i> programme - a database that gathers data from the production process. Also to apply statistical tools to monitor production process performance and identify trends.
JAN 2015 -	<b>Assistant Tax Advisor - EY, Dublin, Ireland</b>
AUG 2015	Work placement as part of my B. Sc. in Financial Mathematics. My role was: liaising with clients and the Revenue Commissioners; gathering relevant information from clients; preparing and filing client's tax returns; assisting in providing tax advice to clients; documenting client meetings and calls; training and mentoring the summer interns.
JAN 2009 -	<b>Cashier / Sales Assistant - Shannon Stores, Limerick, Ireland</b>
DEC 2014	Part time job in a busy local grocery store. My duties were: dealing with customer queries and requests; working the cash register; stock taking and stocking shelves; receiving deliveries and compiling orders; handling money transactions; opening, closing and locking up the shop.

### Teaching

CURRENT -	<b>Tutor - Maths Support Centre, University College Dublin, Ireland</b>
SEPT 2019	I currently work as a tutor providing one-to-one assistance to students taking maths and stats related university modules.
SEPT 2018 -	<b>Teaching Assistant - School of Maths &amp; Stats, University College Dublin, Ireland</b>
DEC 2022	I have worked as a teaching assistant over the last four years for the following modules: <a href="#">ACM40290 Numerical Algorithms</a> ; <a href="#">STAT10050 Practical Statistics</a> ; <a href="#">STAT10060 Statistical Modelling</a> ; <a href="#">MATH30250 Cryptography: Theory &amp; Practice</a> ; <a href="#">STAT40250 Survival Models</a> ; <a href="#">ACM40810 Transferable Skills</a> ; <a href="#">ACM10100 Differential &amp; Difference Equations: Applications to Econ &amp; Fin.</a>

## Skills Profile

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LANGUAGES	English (native speaker; fluent), French (Leaving Certificate Level).
PROGRAMMING	Advanced knowledge in C, C++, Python, Linux, OpenMP & MPI, $\text{\LaTeX}$ . Proficient in CUDA & OpenACC.

## References

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References Available on Request

Last updated on November 6, 2023