ADAM Ó CONGHAILE

St. Catharine's College, Cambridge

ac891@cl.cam.ac.uk

EDUCATION

PhD in Computer Science (2ⁿᵈ Year)   *October 2018 - Present*

Computer Laboratory, University of Cambridge

Topic: Comonadic Constructions in Finite Model Theory

Supervisor: Prof. Anuj Dawar

MMath & BA in Mathematics   *June 2017*

Christ's College, University of Cambridge

Result: 1ˢᵗ Class Honours with Distinction

Courses including Logic, Quantum Computation, Probability & Measure

Irish Leaving Certificate (625/625 points)   *June 2013*

Coláiste Chiaráin Community School, Leixlip, Ireland

INDUSTRY EXPERIENCE

Strategic Sourcing Analyst   *June 2017 - June 2018*

Keelvar, a SaaS eSourcing start-up   *Cork, Ireland*

Professional Services:

· Exceeded expectations in quickly learning the field of combinatorial auction design mastering and modelling of complicated auctions in Keelvar's tool. Was fast-tracked to managing projects independently.
· Designed and consulted on procurement competitions for 100's of millions of dollars in spend, often working to demanding deadlines in high pressure environments.
· Represented the company in English and French to a major client during a week-long solo on-site deployment and to academic partners during a collaboration meeting with Harvard's EconCS group.
· Wrote technical reports and training materials for the company's internal knowledge management system.

Engineering:

· Worked closely with the engineering team reporting and fixing bugs through JIRA and participating in internal code review on Github.
· Automated time-consuming professional services tasks in Python, interfacing with a Django backend.
· Proposed and developed a feature for detecting errors in bid submissions on Keelvar's platform, saving on one of the most time-intensive parts of the auction process.

Database Consultant   *Summer 2015 & 2016*

Emas Pharma, a medium-sized CRO   *Hitchin, Herefordshire*

· Led a project to move Emas's data collection and analysis from distributed Excel sheets to a relational database, reporting directly to the COO.
· Managed this transformation in consultation with employees and management in the 50-person office.
· System designed remains in place and has support of staff and management, I occasionally consult on changes and updates.

FUNDING & AWARDS

3+ Years EPSRC Grant: For research proposal written with Anuj Dawar.   *2018*

Christ's College Graduate Scholarship: For outstanding exam performance in MMath.   *2017*

Christ's College Scholarship: For outstanding exam performance in BA.   *2014*

Honourable Mention, International Maths Olympiad   *2013*

Silver Medal, European Union Science Olympiad   *2011*

Gold Medals in National Maths, Science and Linguistics Olympiads   *2010-13*

RESEARCH ACTIVITIES

Reading Group on Constraint Satisfaction Problems   *October 2018 - Present*
with Computer Lab Logic & Algorithms Group

· Studied algebraic methods used to prove upper and lower bounds for complexity of Constraint Satisfaction Problems, through weekly paper readings and presentations.
· Gave hour-longs talks on Algebraic Results in Digraph CSPs and The Complexity of Holant Problems.
· Wrote notes on topics presented and gained insight into recent success in CSP Dichotomy Theorems.

Applied Category Theory Adjoint School   *February 2019 - July 2019*
an international collaboration of students and experts in Category Theory

· Won a place on a research project led by Dr. Pietar Hofstra, on Turing Categories, a category theoretical approach to computation theory.
· Read and wrote about 12 papers on leading areas of application of category theory spanning Quantum Computing, Probability Theory and Computational Linguistics.
· Collaborated with a group from Ottawa, UC Riverside and MIT on new research on Turing Categories

RESEARCH OUTPUT

Conference Talk: **k-Cores for Game Comonads**   *July 2019*
Workshop on contextuality as a resource in quantum computing, University of Oxford

Invited Presentation: **Total Maps of Turing Categories**   *May 2019*
Applied Category Theory Adjoint School

Expository Article: **Total Maps of Turing Categories**   *Forthcoming*
n-Category Café, a highly-respected blog on category theory

TECHNICAL STRENGTHS

Programming: Python, Django, MATLAB, Haskell, VBA
Collaboration: Github, JIRA, Confluence, Agile
Analysis & Presentation: Excel, Tableau, Powerpoint, LATEX
Languages: English (Native), Irish (Fluent), French (B2/C1), Mandarin (A1)

OTHER ACTIVITIES & EXPERIENCE

Academia Undergrad supervisor in Logic and Complexity Theory, assistant editor of Eureka (2015)
Leadership Vice-President of The Archimedean's (2016), JCR Catering Officer, Christ's College (2015)
Hobbies Amateur actor and mid-distance runner, avid reader and cook, speaker of Irish and French.