Edwin Lock

Doctoral candidate in Computer Science
University of Oxford

7 Dove House Close
Oxford OX2 8BG
United Kingdom
☎ +44 7491 989 317
✉ edwin.lock@cs.ox.ac.uk
www.edwinlock.com

Education

2017–present **DPhil in Computer Science**, *University of Oxford*.
Advisor: Paul W. Goldberg

2016–17 **MSc in Mathematics and Foundations of Computer Science**, *University of Oxford*, **Distinction**.
Thesis: "Analysing and optimising kidney paired donation markets"

2013-16 **BSc in Mathematics**, *FernUniversität in Hagen*, Germany, **First-class honours**.
Thesis: "On characterising g_B-game perfect graphs"

2008–11 **BA in Music**, *University of Oxford*.
Dissertation: "Where Rosen was wrong; the perception and production of grand piano tone quality"

Publications

2021 L Benavides-Vázquez, H A Guzmán-Gutiérrez, J Jonnerby, P Lazos, **E Lock**, F J Marmolejo-Cossío, N Rajgopal and J R Tello-Ayala. Optimal Testing and Containment Strategies for Universities in Mexico amid COVID-19. *Proceedings of EAAMO'21*. `https://edwinlock.com/pdfs/eaamo21.pdf`

2020 PW Goldberg, **E Lock** and F Marmolejo-Cossío. Learning Strong Substitutes Demand via Queries. *Proceedings of WINE 2020*. `https://arxiv.org/abs/2005.01496`

2020 J Jonnerby, P Lazos, **E Lock**, F Marmolejo-Cossío, CB Ramsey and D Sridhar. Test and Contain: A Resource-Optimal Testing Strategy for COVID-19. *AI for Social Good 2020, Harvard CRCS Workshop*.

pre-print J Jonnerby, P Lazos, **E Lock**, F Marmolejo-Cossío, CB Ramsey, M Shukla, D Sridhar. Maximising the Benefits of an Acutely Limited Number of COVID-19 Tests. `https://arxiv.org/abs/2004.13650`

under review E Baldwin, PW Goldberg, P Klemperer, and **E Lock**. Solving Strong-Substitutes Product-Mix Auctions. `https://arxiv.org/abs/1909.07313`

2019 SD Andres and **E Lock**. Characterising and Recognising Game-Perfect Graphs. *Discrete Mathematics and Theoretical Computer Science*, 21(6), 2019. `https://arxiv.org/abs/1810.12439`

Conferences

2021 **Talk** on *Solving the Strong Substitutes Product-Mix Auction*, GAMES'20.

2020 **Talk** on *Learning Strong-Substitutes Demand Correspondences*, WINE 2020.

2020 **Talk** on *Test and Contain: A Resource-Optimal Testing Strategy for COVID-19 in Mexico*, GCEC'20.

2020 **Talk** on *Learning Strong-Substitutes Demand Correspondences*, BCTCS 2020.

2018 **Talk** on *Solving Strong-Substitutes Product-Mix Auctions*, WINE 2018.

2018 **Poster** on *Solving Strong-Substitutes Product-Mix Auctions*, WINE 2018.

2016 **Talk** on *A Characterisation of g_B-Perfect Graphs*, KOLCOM 2016.

2016 **Talk** on *Characterising g_B-Perfect Graphs*, Studierendenkonferenz der DMV 2016 (**Best talk award)**.

Working experience

2021-present **Non-Stipendiary Research Fellow**, *Nuffield College, University of Oxford*.
Performing research into economics and computation, with a focus on auction design.

2021-present **Postdoc**, *Department of Economics, University of Oxford*.
Performing research into economics and computation, with a focus on auction design.

2020-present **Stipendiary lecturer**, *Balliol College, University of Oxford*.
Teaching undergraduate computer science students in various subjects including compilers, concurrent programming, digital systems, imperative programming and linear algebra. Assisting with the admission of undergraduate students in Computer Science at Balliol College. Setting and marking College collections (exams).

April, 2019 **Organiser and tutor**, *Dr. HN Science Centre*, Gauribidanur, India.
Organised, ran and taught at a science workshop in rural India. Introduced students to scientific techniques, provided hands-on experience with scientific equipment and familiarised students with cutting-edge research topics.

2019-present **College tutor**, *Pembroke College and Lady Margaret Hall, University of Oxford*.
Conducted one-to-one teaching of undergraduates in Computer Science and Mathematics in a tutorial setting.

2018-present **Departmental teacher**, *Department of Computer Science, University of Oxford*.
Classroom teaching for the computational complexity course. Supervised and assisted the lab demonstration sessions accompanying various lecture series.

2017-present **University admissions assistant**, *Mathematical Institute, University of Oxford*.
Marked MAT (mathematics admissions test) scripts, and assessed the academic aptitude of undergraduates applying for mathematics or computer science at Imperial College, Oxford and Warwick University.

Awards and grants

2020 ACM SIGecom **research grant** ($25,000) for developing a COVID-19 testing and containment mechanism in Mexico (see `www.testandcontain.com`).

2020 ACM SIGecom **best poster video award** at the Global Challenges for Economics and Computation workshop at the EC'20 conference.

2019 **Master grant** from Merton College (Oxford) for my science workshop at the Dr. HN Science Centre in Gauribidanur, India.

2017–present **EPSRC Scholarship** for a DPhil in Computer Science at Oxford.

2017 **College Prize** for achieving a distinction in MSc, Merton College (Oxford).

2016 **Best talk award** at the Studierendenkonferenz der DMV.

2014–15 **Deutschlandstipendium** (German state scholarship).

2013–14 **Deutschlandstipendium** (German state scholarship).

2008–11 **Organ Scholarship**, Oriel College (Oxford).

2001–2008 **Prizes** at various national music competitions (for piano), including **1st prizes** at Prinses Christina Concours (the Netherlands, 2002) and Jugend Musiziert (Germany, 2002) and **live performance** on Radio Netherlands Worldwide (2002).

Projects

MD4SG I co-lead the MD4SG healthcare working group, which currently focuses on alleviating inequalities arising from COVID-19 around the world, and on developing policy recommendations for more effective and equitable global vaccination and strategies.

Test and Contain I co-founded Test and Contain, a project to design and implement a resource-optimal testing and containment mechanism that helps protect the health and livelihoods of those hardest hit in low to middle income countries. This work is supported by an ACM SIGecom GCEC'20 grant. For more details see `www.testandcontain.com`.

GitHub My personal GitHub account hosts an implementation of the algorithms developed in my paper on product-mix auctions at `https://github.com/edwinlock/product-mix`.

Technical skills

Competent programmer in Julia, Python, Java and JavaScript. Uses Git for version control routinely. Extensive experience writing and typesetting scientific text in LaTeX.

Languages

Trilingual in **English**, **German**, and **Dutch**. Grew up in the Netherlands, commuted daily to Germany and lived in England for extended periods of time before studying in Oxford.