

Mr Paul Secular

MSci ARCS

CONTACT

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EDUCATION

PhD Mathematics and Physics (in progress)

2016–present

University of Bath

Developing parallel matrix product state algorithms for the simulation of strongly-interacting quantum lattice systems. Supervised by Sergey Dolgov (University of Bath) and Stephen Clark (University of Bristol). Working in collaboration with Dieter Jaksch's Quantum Systems Engineering group in Oxford on the Tensor Network Theory library software project (www.tensornetworktheory.org).

MSci Physics with Theoretical Physics (2.1)

2012–2016

Imperial College London

MSci project: "Nonlocality & Impossible Machines" (80%) supervised by David Jennings.
1st year summer project: "Recovering Chaotic Systems using Genetic Algorithms" (92%).
Modules included: Computational Physics, Complexity and Networks, Information Theory, Foundations of Quantum Mechanics, Quantum Information, Advanced Particle Physics, General Relativity.

CertHE Physics and Mathematics (Distinction)

2011–2012

Birkbeck, University of London

MPhys Physics (not completed)

1996–1998

St. John's College, University of Oxford

SKILLS

Object-oriented programming, procedural programming, relational database design, debugging, unit testing, web design.

C, PYTHON, MATLAB, VISUAL BASIC, SQL, JAVASCRIPT, HTML, CSS.

MPI, OPENMP, BLAS, LAPACK, ARPACK, NUMPY, MATPLOTLIB.

MAKE, GIT, SUBVERSION, ARM DDT, PHOTOSHOP, GIMP, INKSCAPE, VISIO.

LANGUAGES

English (native), Italian (intermediate).

COURSES

Advanced Quantum Theory (Distinction) <i>University of Bristol, School of Mathematics</i>	2019
Teaching introduction: laboratory-based teaching <i>University of Bath</i>	2017
High Performance Computing Autumn Academy <i>University of Cambridge</i>	2016
The discovery of the Higgs boson MOOC (91%) <i>University of Edinburgh via FutureLearn</i>	2014
Great Presentations <i>Happy Computers</i>	2006
The Visual Basic 2005 Programming Language <i>QA</i>	2006

WORK EXPERIENCE

Graduate Teaching Assistant <i>University of Bath, Part-time</i> Assisted with problem classes and computing labs in the Physics and Maths departments: Scientific Computing (2018-19), Mathematical Methods for Physics (2017-18), Programming Skills for Mathematics & Physics (2017-18), Computational Physics B (2016-17).	2016–2019
UROP software developer <i>Imperial College London, Part-time</i> Worked with a Teaching Fellow to design and develop an educational web application for 1st-year undergraduates learning special relativity.	2014–2015
Web Developer <i>Freelance, Part-time</i> Designed and built e-commerce websites for two independent fashion boutiques.	2008–2010
Software Analyst/Developer <i>YouthNet, Full-time</i> Worked on the do-it.org project as lead developer of the V-Base software, which was used by the UK's Volunteer Centre network, Sport England, and Business In The Community. Introduced an Agile methodology and documented requirements using UML. Undertook and presented research on IT infrastructure in the Voluntary and Community sector.	2002–2007
Software Engineer <i>Cognition Consulting, Full-time</i> Designed and developed a bespoke content management system for Global Continuity and worked with other developers on risk-management database applications.	2000–2002
Software Engineer <i>Petroconsultants-MAI Ltd., Full-time</i> Worked in small teams on the development of database applications using Visual Basic, Access, and SQL Server.	1999–2000

CONTRIBUTED TALKS

University of Bath HPC Symposium 2019

A parallel time-evolution algorithm for quantum systems with long-range interactions

University of Bath HPC Symposium 2018

Parallel implementation of the Time-Evolving Block Decimation algorithm

VOLUNTARY EXPERIENCE

PhD student mentor

2017–2018

University of Bath

Undergraduate student mentor

2013–2015

Imperial College London

FUNDING

Quantum Information Theory research term grant

2019

The Instituto de Ciencias Matemáticas

HPC PhD studentship

2016

University of Bath / ClusterVision

HPC Autumn Academy bursary

2016

HPC-SC Consortium

Eliahou Dangoor undergraduate scholarship

2012

Imperial College London

MEMBERSHIPS

Society for Industrial and Applied Mathematics

2018–present

Graduate student member

Institute of Physics

2011–2018

Student/Associate member

REFERENCES

Available upon request