

# Mark DOUTHWAITE

## PERSONAL DETAILS

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PHONE: +44 (0)7540 367 932  
EMAIL: [mark@douthwaite.io](mailto:mark@douthwaite.io)  
DATE OF BIRTH: 4 March 1992  
NATIONALITY: British

## WORK EXPERIENCE

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- JUN. 2016 - Present | Independent Technology Consultant, Manchester, UK  
*Manchester-based start-up*  
Supported the design of a Bayesian filtering-based machine learning system for distributed networks for a Manchester-based start-up. Supported the design and implementation of a data visualisation platform for said start-up. The platform is being trialled for UK-wide deployment.
- OCT. 2014 - Present | Teaching Assistant at UNIVERSITY OF YORK, York, UK  
*Department of Computer Science, Department of Physics*  
Engaged in both supporting and leading undergraduate and industrial courses in Computer Science and Physics. Topics taught include Industrial Safety & Software Engineering courses, Mathematics (Numerical Methods for Physics), Theoretical Computational Laboratories and Scientific Python for Physics. Industrial courses have been delivered to BAE Systems and Jaguar Land Rover.
- JUN. 2012 - OCT. 2013 | Research Assistant at UNIVERSITY OF YORK, York, UK  
*Condensed Matter Physics Group (Nanophysics)*  
Supported general research activities in the Condensed Matter Physics (CMP) group as part of Dr. Y. Hancock's research team. Activities included the preparation and analysis of Graphene samples. The work prompted the redevelopment of a *Python*- and *Fortran*-based simulation tool to simulate Graphene nanostructures.
- AUG. 2010 - OCT. 2010 | Lab Assistant at UNIVERSAL PRODUCTS, Preston, UK  
*Universal Products Laboratories*  
A basic laboratory analyst work-experience role at Universal Products Laboratories (UPL).

## EDUCATION

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- Present | **University of York, York, UK - Doctor of Philosophy (PhD)**  
*Computer Science* | Specialisations: Artificial Intelligence & High Integrity Systems  
Thesis: "The Assurance of Bayesian Networks for Mission Critical Systems" | Advisor: Prof. T. KELLY  
Expected End Date: April 2018
- JUN. 2014 | **University of York, York, UK - Master of Physics (MPhys)**  
*Experimental Physics* | Specialisations: Solid State Physics & Nanotechnology  
Thesis: "A GUI for Graphene Nanoribbon Simulation" | Advisor: Dr. Y. HANCOCK  
OVERALL: 2:1, MASTERS THESIS: 1:1
- AUG. 2010 | **Blackpool Sixth Form, Blackpool, UK - A2 Levels 3 A - B**
- AUG. 2008 | **Hodgson Academy, Poulton-le-Fylde, UK - GCSEs 14 A\* - B**

## VOLUNTEER EXPERIENCE

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- AUG. 2015 - | Programme Committee Member, YORK DOCTORAL SYMPOSIUM, York, UK  
NOV. 2017 | *Department of Computer Science*
- OCT. 2012 - | Outreach Ambassador, UNIVERSITY OF YORK, York, UK  
NOV. 2017 | *Department of Physics*
- DEC. 2014 - | Training Consultant, CODE CLUB PRO, York, UK  
OCT. 2016 | *Code Club Teacher Training (UK)*

## SCHOLARSHIPS AND CERTIFICATES

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- SEPT. 2015 Business Innovation Award, Winner (Sponsored by IBM and University of York)
- AUG. 2014 Industrial CASE PhD Scholarship (Partnership with BAE Systems)
- JUN. 2013 Summer Vacation Research Bursary (Sponsored by Department of Physics)
- FEB. 2013 The App Challenge Award 2013, Winner (Sponsored by York Careers)
- JUN. 2010 British Science Association CREST Gold Award

## PUBLICATIONS

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- FEB. 2018 Safety-Critical Software and Safety-Critical Artificial Intelligence  
*Safety-Critical Systems Symposium 2018*
- OCT. 2017 Establishing V&V Objectives for Safety-Critical Bayesian Networks  
*28<sup>th</sup> International Symposium on Software Reliability Engineering (AI Workshop)*

## ORGANISATIONS

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- MEMBER Institute of Physics (IoP)
- MEMBER Institute of Electrical and Electronics Engineers (IEEE)
- MEMBER IEEE Computer Society's Technical Council on Software Engineering
- MEMBER Python Software Foundation
- ASSOCIATE Data Science Foundation
- STUDENT MEMBER Manchester Digital

## TECHNICAL SKILLS

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- BASIC SQL, MATLAB, SWIFT, FORTRAN, TENSORFLOW, JAVA, R
- INTERMEDIATE C++, C, JAVASCRIPT, Q-LEARNING, HTML,  
DJANGO, UBUNTU, MACOS, KERAS
- ADVANCED BAYESIAN NETWORKS (inc. DBN/HMM/CRFs),  
PYTHON (inc. SciPy, NumPy, Scikit-Learn, Pandas),  
NEURAL NETWORKS (inc. ESN/MLP/RNN)

## LANGUAGES

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- ENGLISH: Native
- GERMAN: Basic Knowledge

## INTERESTS AND ACTIVITIES

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Technology, Scientific Programming, Market Analysis, Artificial Intelligence,  
Physics, Teaching, Photography, Travelling, Running, Cooking, Live Music