SARAH JENKINS

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ADDRESS Institute of Physics, Johannes Gutenberg University Mainz, Germany

Specialist in the field of computational modelling of physical systems. Postdoctoral researcher at Johannes Gutenberg University of Mainz, using machine learning to detect defects from images in magnetic materials. A developer of the vampire software package for atomisitic modelling of magnetic systems. Led three workshops and created youtube tutorials teaching the code. Two years experience as a research software engineer with expertise in atomisitic modelling of complex materials, specifically non-collinear anti-ferromagnets and ferrimagnets.

WORK EXPERIENCE

Current **Post Doctoral Researcher**
Johannes Gutenberg University of Mainz
Machine learning to find defects in experimental images of magnetic materials training the algorithm using simulation data.

2019 - 2020 **Research Software Engineer**
UoY, National University of Colombia
Developing a code to simulate Hexaferrite permanent magnets for renewable energy

2019 - 2020 **Demonstration of Masters project**
University of York,UK
Working alongside a visually impared student to create a project adapted to his needs.

2018 - 2019 **Research Software Engineer**
University of York,UK
Developed a new algorithm in a widely used atomistic modelling code using MPI to create optimised, scalable code. The developed code was 10 times more memory efficient.

RESEARCH VISITS

April 2018 **Mahasarakham University, Thailand**
Supervisor: Phanwadee Chureemart
Demonstrating VAMPIRE at the university

Nov 2016 **Mahasarakham University, Thailand**
Implementation of a spin transport module for use modelling read head devices.

-April 2017 *Supervisor: Phanwadee Chureemart*

Oct 2016 **Seagate, Spring Town, UK**
Supervisor: Alexey Dobrynin, Kevin McNeil
Modelling an entire multicale read head device to their specifications.

EDUCATION

PhD **2015 - 2020**, **The University of York**
Atomistic modelling of the complex anti-ferromagnetic material IrMn
Dr. R. F. L. EVANS and Prof. Roy CHANTRELL
Atomistic modelling dynamic properties of the complexantiferromagnets (IrMn and Mn2Au) using the VAMPIRE software package. Developed a micromagnetic/atomistic multiscale modules within the vampire to model entire read head devices.Close collaberation with industry (Seagate Technologies).

MPhys **2011-2015**, **The University of York**
Winner of UoY Best Masters Project Prize
Computational modelling of exchange bias
Prof. R. W. CHANTRELL and Dr. R. F.L EVANS
An atomistic model of a IrMn/CoFe bilayer was created to investigate the atomistic origin of exchange bias.

RESEARCH GRANTS

2018 ARCHER - Research Allocation - **£10,472**
Implementation of a hierarchical dipole-dipole field calculation.

2019 EPSRC - Impact Acceleration - **£2,650**
Travel money to visit Seagate, Derry

2020 GCRF - Research Mobility - **£12,228**
Collaboration with the national University of Colombia modelling permanent magnets.

2020 The British Council - **£2,212**
Collaberation with Spintec France to investigate anti-ferromagnetic skyrmions.

Co-Supervision Experience

PhD Project	Binh Nguyen	2020 - 2021, Atomistic simulations of FePt
Masters Project	Tobias Wagner	2021, Modeling of domain wall dynamics in Mn2Au
Masters Project	Petros Zantis	2020 - 2021, Atomistic simulations of domain walls in 2D CrGeTe
Masters Project	Josh Nonet Black	2019 - 2020, Machine learning of Gamma Doradus and Delti Scuti stars
Masters Project	Alex Armstrong	2019 - 2020, The Multi scale Read Head model
Summer Project	Simon White	2018, Composition and Order effects of Exchange Bias in IrMn

Key Publications

1 **Jenkins, S.**, Evans, R.F.L., *Enhanced Finite size and interface mixing effects in IrMn ultrathin films*, Journal of Applied Physics, 124, **2018**

2 **Jenkins, S.**, *et al. Magnetic Anisotropy of the noncolinear AFM IrMn3*, Physical Review B, 100, **2019**

3 **Jenkins, S.**, *et al. Magnetic stray fields in nanoscale magnetic tunnel junctions*, Journal of Physics D , 53, **2019**

4 Moreneo, R., *et al. The role of faceting and elongation on the magnetic anisotropy of magnetite Fe3O4 nanocrystals*, Scientific Reports, **2020**

5 **Jenkins, S.**, Evans, R.F.L., *Spin wave excitations in exchange biased IrMn/CoFe bilayers*, Journal of Applied Physics, **2020**

6 Evans, R.F.L., Rozsa, L., **Jenkins, S.**, Atxitia, U., *Temperature scaling of two-ion anisotropy in pure and mixed anisotropy systems*, Physics Review Letters,**2020**

7 Augustin, M., **Jenkins, S.**, Evans, R. F. L., Novoselov, K. S., Santos, E. J. G. *Lifetime evolution of meron and antimeron topological spin textures in the two-dimensional magnet CrCl3*, Nature Communications, 12, **2020**

8 Wahab1, D. A., Augustin, M., Valero S. M., Kuang W., **Jenkins S.**, Coronado E., Grigorieva I. V., Vera-Marun I. J., Navarro-Moratalla, E., Evans R. F. L., Novoselov K. S., Santos E. J. G. *The quantum non-Heisenberg nature of two-dimensional CrI3 magnets*, Advanced Materials, **2020**

9 S. Jenkins, R. W. Chantrell, R. F. L. Evans, *The origin of exchange bias in multigranular non-collinear IrMn/CoFe thin films*, Physical Review B, 103, **2020**

Workshop and Conference Organisation

Lead organiser Advanced VAMPIRE Workshop 2018
Virtual VAMPIRE Workshop 2020

Joint Organiser VAMPIRE Workshop 2017
Ultrafast Magnetism Conference 2019
UoY Post Graduate conference 2019

Community

Reviewed Five papers
Created Youtube tutorials on using VAMPIRE
A Developer of the vampire software package

Conferences, Workshops

Talks Two invited talks:
IOP Magnetism Winter School 2017
IOP Magnetism Winter School 2018

Conferences Presented at four international and five national conferences
Given nine conference presentations and seven posters

Workshops Attended 5 Summer Schools
Attended 3 workshops one on HPC

References

Dr. Karin Everschor-Sitte: Postdoc Supervisor
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Dr.R. F. L. Evans: PhD Supervisor
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