Diarmaid de Búrca

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DEVELOPMENT EXPERIENCE

Backend Engineer Apr. 2018 - Present
Makersite GmbH, Berlin, Germany
- Developed RESTful APIs
- Maintained and developed Python codebase
- Worked as team lead for different projects

Data Scientist Nov. 2017 - Mar. 2018
Rey Analytical Research, Cologne, Germany
- Performed t-tests, z-tests, F-tests, ANOVA and linear modelling as required
- Worked on a project to project basis
- Developed models in SAS and R

Software Engineer Feb. 2016 - Oct. 2017
Roslin Institute, University of Edinburgh
- Maintained and extended animal simulation codes
- Developed a graphical user interface for animal simulation codes
- Worked on parallisisation of different simulation codes
- Worked on developing a massively parallel mixed model solver

Intern Sept. 2012
RealSim, Unit 110, Business Innovation Centre, Upper Newcastle, Galway, Ireland
- Developed a supernovae video using Unity3D

OTHER EXPERIENCE

Tutor Sept. 2010 - Jan. 2016
Physics Department, National University of Ireland, Galway (NUIG)

Outreach Member Sept. 2010 - Jan. 2016
Collage of Science, NUIG

Tour Guide Sept. 2012 - Nov. 2012
CERN Exhibition, Leisureland, Galway

EDUCATION

Doctorate (Astrophysics), NUIG Sep. 2010 - Dec. 2015
Thesis: *Synchrotron Emission from Isolated Neutron Stars*
Developed a new model of synchrotron emission from high ($> 10^5$T) magnetic fields in the optical regime. Implemented this model in the Pulsar Reverse Engineering Code (POREC), a massively parallel code that simulated emission from the entire open magnetosphere of pulsar. Compared the results of the simulations to the observations of the Crab pulsar in order to restrict the volume of the magnetosphere from which emission could occur. Simulations showed support for the slot gap model of pulsar emission over the outer gap or polar cap models.

Bachelor of Science(Physics and Applied Mathematics) Sept. 2006 - May 2010
Received a First Class Honours (78.38%) degree from NUIG

EXTRA-CURRICULAR ACTIVITIES

Organiser, March for Science Edinburgh — Apr. 2017

AstroSoc Comittee Member — Sept. 2012-Feb. 2016

- Won Best New Society at the 2014 Board of Irish College Societies Awards
- Won Best Departmental and Best New Society at NUIG Society Awards, 2014

Physics Soc. Treasurer	Sept. 2009 - Sept. 2010
Chess Soc. Treasurer	Sept. 2008 - Sept. 2010
Aikido Club Secretary	Sept. 2007 - Sept. 2009
FanSci Soc. Treasurer	Sept. 2007 - Mar. 2008
Committee Member for the Leitir Móir Youth Club	Sept. 2006 - May. 2007

SKILLS

Computational Languages:

- Expert in Fortran (2008)
- Fluent in Python
- Experience with SAS, Java, R and Maple

Personal Skills

- Experience leading team development of projects
- Experience developing projects individually
- Capable of effective time management

Other skills

- Fluent in parallel programming (MPI, OMP)
- Fluent in LaTeX
- Experience with BLAS, LAPACK and SCALAPACK
- Experienced in mathematical analyses
- Experience with AWS

AWARDS

Awarded Meritorious Winner in Mathematical Contest in Modelling (MCM)	2010
Awarded Successful Participant in MCM	2009
Awarded Irish Scholarship from NUIG	2006
Winner of Cumann Cois Fharrige	2006
Awarded University Scholar of NUIG	2006

COURSES

Completed courses in Fortran and Parallel Computing	2012
Basic Molecular Genetics For Bioinformaticians	19-20 May 2016
Methods, Strategies and Tools to Generate, Analyse and Incorporate Genomic Data into Livestock Breeding Programs	3-7 Jun. 2016
Advanced MPI @EPCC	29-30 Sept. 2016
Evolutionary Quantitive Genetics	31 Oct. - 4 Nov 2016

REFERENCES

Prof. Andy Shearer
Physics Dept. NUIG, Ireland
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Gavin Duffy
RealSim Ltd, Business Innovation Centre, Upper Newcastle, Galway, Ireland
Contact: +353 (0) 91 493114 gavin@realsim.ie

Dr. Matt Redman
Physics Dept. NUIG, Ireland
Contact: +353 (0) 91 493357 matt.redman@nuigalway.ie