Nathan Hughes

Date of Birth: 05 May 1994
email: nah26@aber.ac.uk | nathan1hughes@gmail.com
website: nathan1hughes.co.uk

Personal Statement

I am an extremely driven and motivated student, in all things; I make it my goal everyday to improve upon the last. With a true thirst for knowledge and desire for understanding, it is my long-term goal to pursue a career in academia.

Work History

Sept 2017 - Current	**Doonan Lab - Bioinformatician** Whilst studying, I work part time for the John Doonan lab at Aberystwth University. In this role I analyse and prepare large datasets for publication. Typically I work in crop traits and genetics. This involves a lot of collaboration and interaction with different research groups around the world
May 2016 - Aug 2017	**National Plant Phenomics Center - Systems Developer** My role at the NPPC was extremely varied. I have worked on building and redesigning a Gravimetrics system for plant phenotyping and data generation. My favourite role has been in creating image analysis algorithms, used to generate and process data gathered from various systems that the center uses. A large part of my time was devoted to data analysis and statistical evaluation of phenotypic data.
Sept 2015 - Current	**Aberystwyth University - Undergraduate Demonstrator** For this I act as a mentor to first and second year students during their workshops. Specifically I help to reinforce the knowledge students learn in their lectures by guiding them in their practical sessions.
May - Sept 2013	**Belfast Metropolitan College - Systems Specialist** I had been employed as an IS advisor/specialist by BMC to implement their multi-campus systems upgrade.
Feb 09 - March 2013	**Salto National Gymnastics Center - Gymnastics Coach** Sports coach for national level athletes

Education

June 2018	**BSc Computer Science**	Predicted Grade: 1:1
May 2014	**BTEC Extended Diploma**	Final Grade: Distinction*
March 2012	**Artistic Gymnastic Qualifications**	Final Grade: Pass
February 2012	**Gymnastics Judge Examinations**	Final Grade: Pass
June 2010	**GCSEs**	Final Grades: Pass

Publications

Non-destructive, high-content analysis of wheat grain traits using X-ray micro computed tomography	https://doi.org/10.1186/s13007-017-0229-8

Research Experience

My experience has been primarily focused on genomic and phenotypic research in plant science. Specifically computer vision analysis and QTL mapping of seed and grain traits. Additionally I have designed and built automated systems specifically for gathering and generating gravimetric data.

Skills

Research Skills:	Statistical Analysis, Research Methods, Image Analysis, Academic Writing
Experience:	Machine Learning, Artificial Intelligence, Data Modelling
Programming Languages:	C/C++, Python, R, Java, MATLAB, BASH, LaTeX, Haskell, Ruby, HTML, PHP, Perl

Awards

Genetics Society Research Grant 2017	**Recipient**
UK-RAS Field Robotics Contest 2016	**3rd place**
Aberystwyth Excellence Scholarship	**Recipient**

Talks

FOSDEM	**Lightning Talk** | https://fosdem.org/2017/schedule/
BCS	**Show and Tell** | http://midwales.bcs.org/show-and-tell-events/
Aberystywth U	**Bioinformatics workshop** | www.users.aber.ac.uk/msn/abw/

Self-driven Projects

Biology of the cell course	Having fallen in love with biology whilst studying computer science at university, I have started a small project to make a openly available crash-course style of notes for anyone from a non-biology background. I contribute to it quite regularly and plan to complete full series of biology information (https://github.com/SirSharpest/Bio-Cramming)
Image analysis software	As a side project I have started building a Rubik's cube solver which uses OpenCV and AStar IDS to provide instructions for a user to complete a cube puzzle. This is in early stages but progress can be seen at my GitHub which is updated regularly (https://github.com/SirSharpest/Rubkis-Cube-Solver)

References

Prof J. Doonan	**Director NPPC** | jhd2@aber.ac.uk
Dr H. Dee	**Senior Lecturer** | hmd@aber.ac.uk
Dr C. Sauze	**Data Manager NPPC** | cos@aber.ac.uk
Mr P. Greenwood	**BMC Project Manager** | PGreenwood@belfastmet.ac.uk