

Aoife Hughes, MBCS, B.Sc., Ph.D.

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🐦 @AoifeHughes__

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Statement

As a scientist I thrive off the challenge of the unknown. I love working in new fields and using the breadth of my experience to provide insights into novel problems.

Previously I have worked in the fields of computer vision, transcriptomics, genomics, mathematical modelling and data science. I am also passionate about mentoring others.

Education

- 2018 – 2022 **Ph.D. John Innes Centre Morris Group**
Thesis title: *Computational modelling of information transfer between cells*
- 2014 – 2018 **B.Sc. Computer Science, Aberystwyth University.**
Dissertation title: *Modelling the effects of domestication in Wheat through computer vision.*

Employment History






- 2022 – **Data Scientist** - Research Engineering The Alan Turing Institute
- Journal Editor** - Journal of Open Source Software (JOSS)
- 2019 – 2022 **Ph.D Tutor** - The Brilliant Club Charity.
- 2017 – 2018 **X-ray Image Analyst** - Doonan Lab, Aberystwyth University.
- 2016 – 2017 **Junior Scientist** - National Plant Phenomics Centre.
- 2015 – 2018 **Teaching Assistant** - Computer Science Department, Aberystwyth University.
- 2013 – 2014 **Systems Developer** - Belfast Metropolitan College, Northern Ireland, UK.
- Gymnastics Coach** - Salto National Gymnastics Centre, Northern Ireland, UK.

Skills




- Languages **Strong reading, writing, and speaking competencies for English.**
- Coding **Python, R, C/C++, C#, MATLAB, BASH, Java, PHP, SQL, \LaTeX , Perl, Lisp, Ruby, Haskell.**
- Software Engineering **Mobile development (iOS/Android), Game development (Unity, SDL, SFML), Computer vision, Machine learning, Desktop applications, Git, Open source**
- Databases **MySQL, PostgreSQL, SQLite.**
- Web Dev **HTML, CSS, JavaScript, Django, Flask.**
- Misc. **Academic research, teaching, training, consultation, data visualisation, \LaTeX typesetting and publishing.**

Miscellaneous Experience







Awards and Achievements

- 2022  **DigiEduHack Climate Change Contest**, Finalist.
- 2019  **UK Open Source Award**, 1st Place.
- 2017  **Genetics Society Research Grant**, Recipient.
- 2016  **UK-RAS Field Robotics Contest**, 2nd Place.
- 2014  **Aberystwyth Excellence Scholarship**, Recipient.

Additional Projects / Volunteer work





- 2022  **Education developer** - Women In Data
-  **Podcast Host**- Alan Turing Institute
-  **Women specialisation committee** - British Computer Society

Research Talks

-  **International Conference on Arabidopsis Research**. Research presentation.
-  **Mendel Early Career Symposium**. Poster presentation.
-  **Pint of Science**. Public engagement talk.
- 2018  **Genetics Society**. Grant outcome presentation.
- 2017  **FOSDEM**. Main stage talk.
-  **British Computer Society**. Computer vision Talk.

Research Publications

Journal Articles

- 1 Tomkins, M., **Hughes, A.**, & Morris, R. J. (2021). An Update on Passive Transport in and out of Plant Cells. *Plant Physiology*, (kiab406).  doi:10.1093/plphys/kiab406
- 2 **Hughes, A.**, Faulkner, C., Morris, R. J., & Tomkins, M. (2021). Intercellular Communication as a Series of Narrow Escape Problems. *IEEE Transactions on Molecular, Biological and Multi-Scale Communications*, 7(2), 89–93.  doi:10.1109/TMBMC.2021.3083719
- 3 Ohtsu, M., Jennings, J., Johnston, M., Liu, X., **Hughes, A.**, Stark, K., ... Faulkner, C. (2021). Colletotrichum higginsianum effectors exhibit cell to cell hypermobility in plant tissues and modulate intercellular connectivity amongst a variety of cellular processes, 2021.01.13.426415.  doi:10.1101/2021.01.13.426415
- 4 **Hughes, A.**, Morris, R. J., & Tomkins, M. (2020). PyEscape: A narrow-escape problem simulation implementation. *Journal of Open Source Software*.
- 5 **Hughes, A.**, Fradgley, N., Oliveira, H., Corke, F., Cockram, J., Doonan, J. H., & Nibau, C. (2019). Grain depth increases during early domestication in small grain cereals. *The Plant Journal*.
- 6 Cook, F., **Hughes, A.**, Nibau, C., Orman-Ligeza, B., Schatłowski, N., Uauy, C., & Trafford, K. (2018). Barley lys3 mutants are unique amongst shrunken-endosperm mutants in having abnormally large embryos. *Journal of Cereal Science*, 82, 16–24.
- 7 **Hughes, A.**, Askew, K., Scotson, C. P., Williams, K., Sauze, C., Corke, F., ... Nibau, C. (2017). Non-Destructive, High-Content Analysis of Wheat Grain Traits Using X-Ray Micro Computed Tomography. *Plant Methods*, 13(1).  doi:10.1186/s13007-017-0229-8