

Michael Hunt

Physics PhD and aspiring data scientist

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Currently

I have worked as a lecturer in the HE in FE sector for 19 years, having previously been a research physicist in Switzerland and France for 6 years. I have written, managed and delivered a number of HE courses up to Masters level, including a BSc Renewable Energy and Carbon Management. In the last two years, in an effort to develop my data modelling and analysis skills, I have successfully completed many (>25) MOOCs in statistical analysis, machine learning, big data and more, mainly using R, and Python but also Matlab, MS Azure and other tools. I have so far used these new skills to carry out market research, to model heat flows in old buildings, to simulate wind speed and solar variation and to model a pumped storage energy solution for a local town. The heat flow work was part of a long running collaboration with conservation officers within Cornwall Council, funded by a Townscape Heritage Initiative lottery money. It was published last year and presented at an international conference (EECHB 2016). I am now embarking on a machine learning/IoT project to develop a biollogger and software to determine the state of movement of farm animals from accelerometer data alone.

Employment

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| 1998– | Cornwall College HE lecturer, course manager and curriculum area manager. |
| 1997–1998 | CNRS Lab. Louis Neel OXSEN Research Fellow, developing magnetic transistors. |
| 1996–1997 | Physics Department, University of Zuerich Oxygen isotope investigations of Hi Tc superconductors using dilatometry. |
| 1995–1996 | ABB Applied Physics Group, Corporate Research Centre, Baden Daettwil Dilatometric studies of 1 MW Hi Tc superconducting current limiter. |
| 1995–1996 | Solid State Physics Lab., ETH Zuerich Low temperature studies of transport properties in metals |
| 1981–1982 | Research Centre, British Gas, Solihull, UK Coding in FORTRAN and assembly to support gas dispersion investigations. |

Education

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| 1989–1992 | University of Bristol PhD Physics <i>“A de Haas-van Alphen Investigation of the heavy fermion superconductor CeCu2Si2”</i> <i>Supervisor: Mike Springford</i> |
| 1987–1988 | University of Sussex MSc Physics by Research <i>“A de Haas-van Alphen investigation of lithium” (Distinction)</i> |
| 1982–1985 | University of Cambridge BA Natural Science (Physics) |

Presentations

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| 2016 | EECHB: Life Cycle Analysis of Historic Buildings in Cornwall(<i>EECHB</i> , Brussels, Belgium) |
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Publications

I have 24 publications in peer reviewed journals, almost all dating from my years as a post-grad and post-doc 1989-1998. See my profiles on Research Gate or Google Scholar for listings of these. One paper was published in Nature and has over 300 citations. More recently (2016) I presented work at an international conference (EECHB, 2016) on energy efficiency in historic buildings. This was an analysis carried out using R of heat flow through thick, solid walls.

Certifications

| Many online courses in 2015-2016. The code written for most of these can be found in repos on my GitHub page. Most courses required between 20 and 100 hours of work over 4 - 8 weeks. | | | |
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| Platform | Course | Institution | Grade |
| Coursera | The Data Scientist’s Toolbox | JHU | 100% |
| Coursera | R Programming | JHU | 100% |
| Coursera | Getting and Cleaning Data | JHU | 100% |
| Coursera | Exploratory Data Analysis | JHU | 100% |
| Coursera | Reproducible Research | JHU | 100% |
| Coursera | Statistical Inference | JHU | 100% |
| Coursera | Regression Models | JHU | 100% |
| Coursera | Practical Machine Learning | JHU | 100% |
| Coursera | Developing Data Products | JHU | 100% |
| Coursera | Data Analysis and Statistical Inference | Duke | 99% |
| edX | The Analytics Edge | MITx | 96% |
| FutureLearn | Big Data | U. Warwick | 100% |
| Coursera | Introduction to Big Data | U. San Diego | 100% |
| Coursera | Hadoop Platform and Application Framework | U. San Diego | 100% |
| Coursera | Introduction to Big Data Analytics | U. San Diego | 100% |
| Coursera | Programming for Everybody | U. Michigan | 100% |
| Coursera | Using Python to Access Web Data | U. Michigan | 100% |
| Coursera | Using Databases with Python | U. Michigan | 100% |

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|-------------|--|---------------|------|
| edX | Introduction to Computer Science and Programming using Python | MITx | 98% |
| edX | Introduction to Computational Thinking and Data Science | MITx | 97% |
| edX | Data Science and ML Essentials | Microsoft | 93% |
| Lagonita | Statistical Learning | U. Stanford | 88% |
| edX | Machine Learning | U. Stanford | 100% |
| edX | Statistics and R | HarvardX | 100% |
| edX | Introduction to Linear Models and Matrix Algebra | HarvardX | 100% |
| edX | Statistical Inference and Modeling for High-throughput Experiments | HarvardX | 98% |
| edX | High-Dimensional Data Analysis | HarvardX | 100% |
| edX | Annotation and Analysis of Genomes and Genomic Assays | HarvardX | 99% |
| edX | High-performance Computing for Reproducible Genomics | HarvardX | 99% |
| edX | Case Studies in Functional Genomics | HarvardX | 99% |
| edX | Global Warming Science | HarvardX | 100% |
| edX | Case Studies in Functional Genomics | MITx | 100% |
| FutureLearn | Causes of Climate Change | U. Bergen | 100% |
| Coursera | Introduction to programming with Matlab | Vanderbilt U. | 100% |

Technical skills

Python
R
C++
MATLAB
Statistics
LaTeX
Git
Linux
Machine learning
Bash
Data visualisation

Awards

2017

Cornwall College Internal Research Funding: *From relationships to disease.....Real time tracking of social interactions, locomotion and grazing patterns and their potential associations with common production challenges: A pilot study* (with Anna Walker)

Interests

Trail running - several times a week, most weeks.
Project Euler - 181 problems solved so far, using Python, C++, Mathematica, Matlab and R. Homing in on the UK top 50

Links

✉ email
🐙 GitHub
🐦 twitter
🌐 Research gate
🔗 Google scholar

References

Available on request.