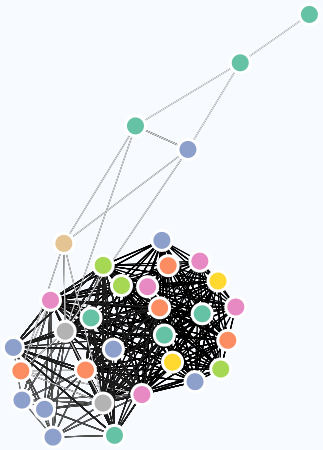
EUGENE HICKEY

I specialise in providing machine learning solutions to a wide variety of problems. With experience across multiple domains of knowledge, I find I can provide novel approaches to existing areas of research.

I teach students to use data analysis to see scientific investigations from a new perspective. In particular I emphasise the use of data visualisations to gain new insight.



EDUCATION

1992 | 1988

PhD
Laboratoire de Chimie de Solide
Universite de Bordeaux I

- Heavy Fermion Intermetallics
- Distinction

1988 | 1987

DEA (MSc)
Laboratoire de Chimie de Solide
Universite de Bordeaux I

- URu_2Si_2 and UIr_2Si_2 intermetallic Properties
- Distinction

1987 | 1982

B.Sc (hons)
Physics Department
Trinity College Dublin

- Undergraduate qualification in experimental physics
- II_2 award

RESEARCH EXPERIENCE

present | 2018

Postgraduate Supervisor
Centre of Applied Science for Health
Technological University Dublin

- Investigating the role of schizophrenia-associated gene expression in the developing human brain using Machine Learning
- Uses data from the Allen Brain Atlas to track the expression profile of genes associated with SZ across neurodevelopmental stages

present | 2017

Postgraduate Supervisor
Department of Applied Science
Technological University Dublin

- Regression Studies to Predict Correlation of SDSS SEGUE Spectra
- Uses broadband stellar magnitudes to predict similarity of stellar spectra and thus appropriateness for differential photometry

View this CV online with links at *eugene-cv.netlify.app/*

CONTACT

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eugene-hickey-769b2b1

LANGUAGE SKILLS

- R
- C
- Python
- SQL

*Made with the R packages **pagedown** and **datadrivencv**.*

The source code is available on github.com/eugene100hickey/cv.

Last updated on 2020-09-03.

2017 | 2015

Postgraduate Supervisor

Department of Applied Science — Technological University Dublin

- A Survey of the Public Perception of Science in Ireland
- Collected a survey with over 800 responses and performed statistical analysis of the results

2017 | 2007

Postgraduate Supervisor

Department of Applied Science — Technological University Dublin

- Data Mining by Grid Computing in the Search for Extrasolar Planets
- Grid analysis of the SDSS catalogue in search of exceptional candidates for differential photometry

RESEARCH FUNDING

2020 | 2018

Presidents Research Award

Department of Applied Science — Technological University Dublin

- Schizophrenia Analysis using Machine Learning on Gene Expression Data from the Allen Brain Atlas
- 24 month masters project

2020 | 2018

ICHEC Project

Department of Applied Science — Technological University Dublin

- Schizophrenia Analysis using Gene Expression Data from the Allen Brain Atlas
- 12 month access to computer system

2017 | 2007

Grid Ireland

Department of Applied Science — Technological University Dublin

- Installation of Grid mini-gateway
- connecting ITTD to Grid Ireland

2016 | 2014

Presidents Research Award

Department of Applied Science — Technological University Dublin

- A Survey of the Public Perception of Science in Ireland
- 24 month masters project

2011 | 2009

PhD Continuation Fund

Department of Applied Science — Technological University Dublin

- Data Mining by Grid Computing in the Search for Extrasolar Planets
- 18 month PhD continuation fund

2009 | 2007

HEA Strand 1 Research Grant

Department of Applied Science — Technological University Dublin

- Data Mining by Grid Computing in the Search for Extrasolar Planets
- 24 month masters project

2007 | 2002

National Centre for Plasma Science and Technology

Department of Applied Science — Technological University Dublin

- Member of management team
- Representative fromTallaght on 8 person board

1992 | 1988

Erasmus Award

Laboratoire de Chimie de Solide — Universite de Bordeaux I

- Doctoral Research Funding

INDUSTRY EXPERIENCE

1994 | 1992

Medical Physicist

Department of Medical Physics — St James's Hospital

- Teleradiology
- Transferring CT, MRI, US and digitised X-rays between St James's and Beaumont Hospitals

I have worked in a hospital environment and have maintained collaborations that have led to fruitful research work since. The main focus has been on medical imaging and diagnostics.

TEACHING EXPERIENCE

present | 1995

Lecturer in Physics

Department of Applied Science, Tallaght Campus — Technological University Dublin

- Teaching on Pharmaceutical Science, Forensics, Sports Science, and Bioanalysis undergraduate courses
- Emphasis on supervising final year projects in Pharmaeutical Science

present | 2018

Data Visualisation with ggplot

Taught Postgraduate Modules — Technological University Dublin

- Module design and delivery
- Topics covered from essential ggplot to maps and networks

present | 2020

Tidyverse Instructor[1]

Rstudio.com

- instructor
- Teaching a new generation of R users

My experience in education spans teaching at undergraduate level, on postgraduate modules and supervision, and on industry led courses. I place particular emphasis on using technology to enhance the learning experience.

present | 2015

Final Year Projects

Pharmaceutical Science Honours Degree

Technological University Dublin

- Investigation of Clinical Trials Data using the PharmcoGx Bioconductor Package (2020)
- Single Cell RNASeq Analysis of Transciptomic Data using the scrattch Package (2020)
- Epidemiology of Tuberculosis and HIV in Africa (2019)
- Investigation of Autism Genes by Examining Gene Expression Across Different Areas of Healthy Brains (2018)
- Machine Learning Analysis of the Wisconsin Breast Cancer Dataset (2018)
- Classification of Acute Lymphoblastic Leukemia based on Gene Expression Profiles (2017)

1995 | 1994

Lecturer in Physics

Department of Computing and Science

Waterford Institute of Technology

- Teaching Physics modules to undergraduates in science, engineering, and computing
- Development of a new course in materials science

SELECTED DATA SCIENCE WRITING

2018

Meteors, and Where to Find Them[2]

- Using data from NASA's meteorite database to explore their nature and locations
- Lots of data visualisation including interactive leaflet maps.

2018

Tennis Sets, Jimmy's Theorem[3]

- Statistical analysis of set scores from ATP matches
- Demonstrated visualization-based inference for large data.

I regularly blog about data science and visualization. I enjoy connecting with diverse topics in this way.

SELECTED PUBLICATIONS

2020

A Catalogue of Locus Algorithm Pointings for Optimal Differential Photometry for 23,779 Quasars[5]

Monthly Notices of the Royal Astronomical Society

- Authored with Oisin Creaner, Kevin Nolan, Niall Smith, and David Grennan.

2020

The Locus Algorithm I: A technique for identifying optimised pointings for differential photometry[6]

Astronomy & Computing

- Authored with Oisin Creaner, Kevin Nolan, and Niall Smith.

I have 13 publications in international peer reviewed journals.

My h-index is 6 and my ORCID is 0000-0001-9813-9323[4]

2020 **The Locus Algorithm II: A robust software system to maximise the quality of fields of view for Differential Photometry**[7]

Astronomy & Computing

• Authored with Oisin Creaner and Kevin Nolan.

1995 **Specification and initial evaluation of a multiple application teleradiology system**[8]

British Journal of Radiology

• Authored with N O'Hare, F Wallis, JMT Kennedy, GJ McDermott, A Dowling, J Murphy, and J Malone.

1995 **Magnetic phase diagram of $U_2\{Ru_{1-x}Rh_x\}_3Si_5$**[9]

Journal of Magnetism and Magnetic Materials

• Authored with B Chevalier, T Roisnel, L Piraux, and J Etourneau.

SELECTED PRESENTATIONS

2019 **TUD Scientific Computing Group**[10]

TUD Workshop on Physical and Data Sciences in Health and Environment

2019 **Use Open Source Software**[11]

TEDx Ballyroan

2011 **Grid-computing based data-mining of the Sloan Digital Sky Survey**[12]

Royal Irish Academy

LINKS

1: education.rstudio.com
2: rpubs.com/eugene100hickey/393509
3: rpubs.com/eugene100hickey/365812
4: https://orcid.org/0000-0001-9813-9323
5: https://doi.org/10.1093/mnras/staa2494
6: https://arxiv.org/abs/2003.04582
7: https://arxiv.org/abs/2003.04574
8: https://www.birpublications.org/doi/10.1259/0007-1285-69-824-735
9: https://www.sciencedirect.com/science/article/abs/pii/0304885394006083?via%3Dihub
10: https://rpubs.com/eugene100hickey/498663
11: https://www.youtube.com/watch?v=VsEuOy2kZzs
12: https://github.com/eugene100hickey/cv/blob/master/RIA_Talk_final_2011.ppt