Nicholas Spyrison

Curriculum Vitae
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Education

2018–*2021*	*(expected) Ph.D. Information Technology*	Monash University, Clayton, VIC, AUS
	Thesis: New Tools for User-guided Exploration of Linear Projections	
2008–2012	*B.Sc. statistics*	Iowa State University, Ames, IA, USA
	Minors: physics and mathematics	

Employment

2020–2020 Teaching assistant, data exploration and visualization – Monash University
2018–2018 Research officer, human geology – Monash University
2019–2019 Teaching assistant, business and economic statistics – Monash University
2018–2019 Research officer, criminology – Monash University
2016–2018 **Business intelligence developer** – CPI Card Group Inc.

T-SQL - 2012 (SSMS, SSRS), R language, GitHub, Crystal Reports, Oracle BICS, Excel
- Supply chain reporting leading to more than 4 million USD cost reduction for one location
- T-SQL development – mid-high level abstraction
- 4 reporting tools across multiple database instances

2015–2016 **Business intelligence developer** – United Dominion Realty Trust Inc. (UDR)

T-SQL - 2012 & 2016 (SSMS, SSRS, SSAS - MOLAP Cube), PowerBI, WebFOCUS – 8.0+, Excel
- T-SQL development – high level abstraction
- 3 reporting tools across several database instances
- On-call for enterprize-wide nightly data process

2014–2015 **Business intelligence analyst** – Heartland Financial USA Inc.

WebFOCUS – 8.0+, Excel
- T-SQL development – high level abstraction

2014–2014 **Laboratory technician** – The Ames Laboratory & Iowa State University

CAD Inventor, LabVIEW, Excel

2013–2014 **Delivery analyst** – International Business Machines Corporation (IBM)

Excel, VBA, R language
- Weekly metric/KPI presentations to lower and middle management
- IBM's process improvement methodology, root cause analysis, process behavior analysis
- Weekly metric/KPI presentations to lower and middle management
- Automated cleaning and metric creation in VBA for greater than 1 FTE savings across the team

2012–2012 **User interface developer** – Iowa State University

R language, GitHub, Linux Shell

2010–2012 **Laboratory technician** – The Ames Laboratory & Iowa State University

CAD Inventor, LabVIEW, LaTeX, Excel

2009–2009 **Physics tutor** – Iowa State University
- Classical physics I & II with calculus

Honors and awards

2018 ACEMS Impact and Engagement Award, for development of the R package spinifex
      for development of the R package spinifex
2018 UseR 2018! Datathon, 3rd place, of 5 teams
      for a temporal-spatial shiny dashboard of avian sightings in Australia
2008 American Legion School Award
      for character, especially 'courage, honor, service, leadership, and scholarship', as nominated by my Mock Trial coach

Research summary

Visualization of multivariate spaces

- ➤ Between 2018 and 2021 (expected) researched linear projection visualization, especially as animations across local changes to the basis known as visualization `tours`
- ➤ 1 accepted publication, 1 R package publication
- ➤ Another 3 publications in the pipeline

Superconductors, condensed matter physics

- ➤ Between 2009 and 2014 researched pnictide superconductors (iron-based, type II superconductivity)
- ➤ 6 publications across various compositions and dopings
- ➤ Drafting and fabrication of fabricated tunnel-diode resonators with 0.01ppm sensitivity for contactless resistivity measurements
- ➤ Cryogenic application up to and including vacuum turbo-pumped, He3 systems

Membership

- ➤ Australian Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS)
- ➤ Statistical Society of Australia (SSA), Victorian branch
- ➤ American Statistical Association, district 4
- ➤ Melbourne Users of R Network (MelbURN)
- ➤ Denver R User Group
- ➤ Server SQL Server User Group
- ➤ R-Ladies Melbourne
- ➤ Not so standard deviations (R podcast)
- ➤ The R-podcast
- ➤ Credidibly Curious(R podcast)

Publications

Visualization of multivariate spaces

bibtype Software not implemented

[2] N. Spyrison and Cook, Dianne. "spinifex: An R Package for Creating a Manual Tour of Low-dimensional Projections of Multivariate Data". In: *The R Journal* 12.1 (2020), p. (accepted).

Superconductors, condensed matter physics

[1] K. Cho, M. A. Tanatar, N. Spyrison, et al. "Doping-dependent anisotropic superconducting gap in Na 1- Î´ (Fe 1- x Co x) As from London penetration depth". In: *Physical Review B* 86.2 (2012). Publisher: APS, p. 020508.

[2] H. Kim, M. A. Tanatar, W. E. Straszheim, et al. "Competition between superconductivity and magnetic/nematic order as a source of anisotropic superconducting gap in underdoped Ba 1- x K x Fe 2 As 2". In: *Physical Review B* 90.1 (2014). Publisher: APS, p. 014517.

[3] G. E. Rustan, N. Spyrison, A. Kreyssig, et al. "Noncontact technique for measuring the electrical resistivity and magnetic susceptibility of electrostatically levitated materials". In: *Review of Scientific Instruments* 83.10 (2012). Publisher: American Institute of Physics, p. 103907.

[4] N. Spyrison, M. A. Tanatar, K. Cho, et al. "Environmental stability and anisotropic resistivity of Co-doped Na 1- Î´ Fe 1- x Co x As". In: *Physical Review B* 86.14 (2012). Publisher: APS, p. 144528.

[5] M. A. Tanatar, N. Spyrison, K. Cho, et al. "Evolution of normal and superconducting properties of single crystals of Na 1â€"Î´ FeAs upon interaction with environment". In: *Physical Review B* 85.1 (2012). Publisher: APS, p. 014510.

[6] M. A. Tanatar, W. E. Straszheim, H. Kim, et al. "Interplane resistivity of underdoped single crystals (Ba_{1-x} K_ x)Fe_2As_2 (0 â‰¤ x â‰¤ 0.34)". In: *Physical Review B* 89.14 (2014). Publisher: APS, p. 144514.