Nicholas S Spyrison

curriculum vitae

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G Google Scholar

Education

Ph.D. Information Technology,   **2018 – Dec 2021 (expected)**
Monash University, Clayton, VIC. Australia,
Multi-variate data visualization.

B.Sc. Statistics,   **2008 – 2012**
Iowa State University, Ames, IA. USA,
Minors: physics and mathematics.

Doctoral thesis

Topic: *Interactive and animated visualization of multivariate data via low-dimensional projections, as embedded and viewed in stereoscopically-true 2D and 3D.*
Supervisors:
   Professor Kimbal Marriott, research.monash.edu,
    Department of Human-Centred Computing
   Professor Dianne Cook, dicook.org,
    Department of Econometrics and Business Statistics

Experience

Varied casual/sessional employment,   **2018 – 2021**
Monash University.

- Data fluency associate instructor: especially R, data visualization, and Git
- Teaching assistant: data exploration and visualization
- Research officer: human geology (Melbourne and Sydney Census data wrangling)
- Teaching assistant: business and economic statistics
- Research officer: criminology, community engagement data wrangling and reporting
- Teaching assistant, business and economic statistics

Business Intelligence Developer,   **2016 – 2018**
CPI Card Group.

- Develop mid- and high-abstraction *T-SQL* queries
- Database reporting; across 4 reporting platforms (SSRS, Crystal, Oracle BICS, Excel) and 4 database instances
- Developed supply chain report tracking and feeding a cost reduction of more than $4M USD within one plant

Business Intelligence Developer,   **2015 – 2016**
UDR Real Estate Investment Trust.

- Develop high abstraction level *T-SQL* development
- Database reporting; *SSRS*
- On-call for enterprise-wide ETL process

Business Intelligence Analyst, 2014 – 2015
Heartland Financial USA.
- Database reporting

Delivery Analyst, 2013 – 2014
IBM – International Business Machines.
- IBM's lean/six sigma green belt, root cause analysis (RCA)
- ETL scripting via VBA macros for greater than 1 FTE savings across team

User Interface Developer, 2012 – 2012
Iowa State University; Department of Statistics.

Laboratory Technician, 2010 – 2012
The Ames Laboratory & Iowa State University;
Department of Physics & Astronomy.
Superconductivity & Magnetism Low-temperature Laboratory, physics.iastate.edu/

Physics Tutor, 2010 – 2012
Iowa State University.

Software

R stats: Advanced; package author, academic publications, shiny applications, and blogdown websites

T-SQL: Intermediate, medium to high abstraction, *Esp.* 2012, 2016, SSMS, SSRS

Excel: Power user; macros, VBA, complex analysis and reporting

LaTeX: Intermediate; especially for journal articles, and *Esp.* indirectly through the markup language, rmarkdown

Awards and honors

Melbourne Datathon 2020, Insights category – 1st place, 2020
Changes to Victorian Intraday Electricity Demand Following COVID-19 Restrictions, github.com .

ACEMS Impact and Engagement Award, 2018
Creation and sharing of R package {spinifex} and contributions to {tourr}.

UseR2018 Datathon – 3rd place, 2018
Consumption, modeling, and visualization of over 7 million observations of avian sightings.

Nominated for Student Employee of the Year, 2011 & 2012
Reliability, quality of work, initiative, professionalism, and uniqueness of contribution to Iowa State University.

American Legion award, 2008
Demonstration of the qualities: courage, honor, leadership, patriotism, scholarship, and service.

Community engagement

CHI Down Under May 2020, online conference, Student Volunteer
UseR! July 2018, conference - Brisbane, Australia., Student Volunteer
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)
R-Ladies Melbourne
Denver R User Group
Denver SQL Server User Group
Not so standard deviations (R podcast)
The R-podcast

Software (R package)

[2] N. Spyrison and D. Cook, *Spinifex: Manual tours, manual control of dynamic projections of numeric multivariate data*, version 0.2.7, 2020. [Online]. Available: `https://github.com/nspyrison/spinifex/`.

Conference presentations

[5] K. Cho, M. A. Tanatar, N. Spyrison, H. Kim, R. Prozorov, G. Tan, J. Yan, P. Dai, and C. Zhang, "Doping-dependent anisotropic superconducting gap in $na1-feas$ and $nafe1-xco_xas$ pnictides," presented at the APS March Meeting 2012, Publisher: APS, Boston, Massachusetts: Bulletin of the American Physical Society, 2012.

[8] N. Spyrison, M. A. Tanatar, K. Cho, E. Blomberg, G. Tan, J. Yan, P. Dai, C. Zhang, and R. Prozorov, "Oxidative deintercalation of single crystal $na1-feas$ upon interaction with the environment," presented at the APS March Meeting 2012, Publisher: APS, Boston, Massachusetts: Bulletin of the American Physical Society, 2012.

[10] M. A. Tanatar, N. Spyrison, K. Cho, G. T. Tan, J. Q. Yan, P. C. Dai, C. L. Zhang, and R. Prozorov, "Temperature-dependent resistivity in single crystals $na1-feas$ and $nafe1-xco_x$," presented at the APS March Meeting 2012, Publisher: APS, Boston, Massachusetts: Bulletin of the American Physical Society, 2012.

[12] N. Spyrison, P. Prommapan, H. Kim, J. Maloney, G. E. Rustan, A. Kreyssig, A. I. Goldman, and R. Prozorov, "Development of a tunnel diode resonator technique for magnetic measurements in electrostatic levitation chamber," presented at the APS March Meeting 2011, Dallas, Texas: Bulletin of the American Physical Society, 2011.

Journal articles

[1] N. Spyrison and Cook, Dianne, "Spinifex: An r package for creating a manual tour of low-dimensional projections of multivariate data," *The R Journal*, vol. 12, no. 1, (accepted), 2020.

[3] H. Kim, M. A. Tanatar, W. E. Straszheim, K. Cho, J. Murphy, N. Spyrison, J.-P. Reid, B. Shen, H.-H. Wen, and R. M. Fernandes, "Competition between superconductivity and magnetic/nematic order as a source of anisotropic superconducting gap in underdoped $ba1-xk_xfe_2as_2$," *Physical Review B*, vol. 90, no. 1, p. 014 517, 2014, Publisher: APS.

[4] M. A. Tanatar, W. E. Straszheim, H. Kim, J. Murphy, N. Spyrison, E. C. Blomberg, K. Cho, J.-P. Reid, B. Shen, and L. Taillefer, "Interplane resistivity of underdoped single crystals $ba1-xkxfe_2as_2(0x0.34)$," *Physical Review B*, vol. 89, no. 14, p. 144 514, 2014, Publisher: APS.

[6] K. Cho, M. A. Tanatar, N. Spyrison, H. Kim, Y. Song, P. Dai, C. L. Zhang, and R. Prozorov, "Doping-dependent anisotropic superconducting gap in $na1-\delta fe1-xco_xas$ from london penetration depth," *Physical Review B*, vol. 86, no. 2, p. 020 508, 2012, Publisher: APS.

[7] G. E. Rustan, N. Spyrison, A. Kreyssig, R. Prozorov, and A. I. Goldman, "Noncontact technique for measuring the electrical resistivity and magnetic susceptibility of electrostatically levitated materials," *Review of Scientific Instruments*, vol. 83, no. 10, p. 103 907, 2012, Publisher: American Institute of Physics.

[9] N. Spyrison, M. A. Tanatar, K. Cho, Y. Song, P. Dai, C. Zhang, and R. Prozorov, "Environmental stability and anisotropic resistivity of co-doped $na1-fe1-xco_xas$," *Physical Review B*, vol. 86, no. 14, p. 144 528, 2012, Publisher: APS.

[11] M. A. Tanatar, N. Spyrison, K. Cho, E. C. Blomberg, G. Tan, P. Dai, C. Zhang, and R. Prozorov, "Evolution of normal and superconducting properties of single crystals of $na1\check{~}feas$ upon interaction with environment," *Physical Review B*, vol. 85, no. 1, p. 014 510, 2012, Publisher: APS.

[13] N. Spyrison, P. Prommapan, H. Kim, J. Maloney, G. Rustan, A. Kreyssig, A. Goldman, and R. Prozorov, "Development of a tunnel diode resonator technique for magnetic measurements in electrostatic levitation chamber," Mar. 1, 2011.