

NICHOLAS SPYRISON

DATA SCIENTIST

PROFESSIONAL SUMMARY

I am a published data scientist with extensive experience with a wide variety of multivariate data. I am client-focused, results-orientated with a passion for using data visualization, complex analysis, and factor analysis to simplify complicated problems into interpretable takeaways.

SKILLS

STRENGTHS	Data vis, dimension reduction, feature engineering, machine learning & interpretability
PROGRAMS	R, Python, Git & GitHub, Excel & VBA, L ^A T _E X
PACKAGES	ggplot2, tidyverse, plotly, shiny, tidymodels, caret, DALEX, keras, pandas, scikit-learn
MODELS	xgboost, neural networks, random forest, SVM, logistic, K-NN, K-means, parameter tuning
DATABASES	T-SQL, ORACLE, OLAP/MOLAP, MongoDB
REPORTING	Rmarkdown, Shiny, SSRS, Tableau, PowerBI, WebFOCUS, Crystal

SOFTWARE (R PACKAGES)

SPINIFEX	Facilitates the manual tour. Provides an interface for composing animated and interactive linear projections to various formats. Link
CHEEM	Given a nonlinear model, find the local explanation of each observation. Provides an interactive coordinated views in a shiny application. Novel analysis and visuals to explore the local explanations with the manual tour. This general analysis is demonstrated on SHAP values from random forest models. Link

EDUCATION

DEGREE	Ph.D., Information Technology/Stats	<i>under examination, 2018 — Now</i>
UNIVERSITY	Monash University	Melbourne, Australia
FOCUS	Dimension reduction, interactive and dynamic data visualization, machine learning models and interpretability	
THESIS	<i>Interactive and dynamic visualization of high-dimensional data</i>	Link
DEGREE	B.Sc., Statistics , Physics & Mathematics minors	2008 — 2012
UNIVERSITY	Iowa State University	Ames, Iowa

WORK EXPERIENCE

JOB TITLE	Various seasonal employment	<i>part time during education, 2018 — Now</i>
EMPLOYER	Monash University	Melbourne, Australia
PROGRAMS	R, Git, PowerBI, API <i>Data fluency instructor:</i> taught various workshops on R, modeling, programming, PowerBI, and Git & GitHub, <i>Teaching assistant:</i> data exploration and visualization & business and economic statistics, <i>Research officer:</i> criminology & human geology data cleaning, analysis, summarization & reporting.	

JOB TITLE	Business Intelligence Developer	2016 — 2018
EMPLOYER	CPI Card Group	Denver, CO
PROGRAMS	T-SQL, SSRS, Crystal, Oracle BICS, Excel	
	Develop mid- and high-abstraction database queries. Database reporting; across 4 reporting platforms. Developed supply chain report enabling a cost reduction of more than \$4M USD within one plant.	
JOB TITLE	Business Intelligence Developer	2015 — 2016
EMPLOYER	UDR Real Estate Investment Trust	Denver, CO
PROGRAMS	T-SQL, SSRS, OLAP/MOLAP, WebFOCUS	
	Query, analysis, & reporting. Organized and conducted transition from WebFOCUS reporting to SSRS. On-call for enterprise-wide ETL process.	
JOB TITLE	Business Intelligence Analyst	2014 — 2015
EMPLOYER	Heartland Financial USA	Dubuque, IA
PROGRAMS	T-SQL, WebFOCUS	
	Database querying, data analysis and enterprise reporting.	
JOB TITLE	Delivery Data Analyst	2013 — 2014
EMPLOYER	IBM — International Business Machines	Dubuque, IA
PROGRAMS	R, Excel, VBA	
	Statistical variance analysis & metric reporting to teams and management. IBM's lean/six sigma methodology, root cause analysis, ETL scripting via VBA macros for 0.5 FTE savings across the team. Step-wise model selection with dozens of variables, predicting ticket time.	
JOB TITLE	Various seasonal employment	<i>part time during education, 2010 — 2012</i>
EMPLOYER	Iowa State University & Ames Laboratory	Ames, IA
	<i>User Interface Developer:</i> Custom R application <i>Laboratory Technician:</i> Superconductivity data measurement and analysis, <i>Physics Tutor:</i> Classical Physics (201) to groups of 5 students.	

HONORS AND AWARDS

Monash Postgraduate publication Award	2022
Melbourne Datathon 2020, Insights category — 1st place	Link — 2020
ACEMS Impact and Engagement Award	2018
UseR2018 Datathon — 3rd place	2018
Faculty Graduate Research Scholarship	2018 - 2022
Co-funded Monash Graduate Scholarship	2018 - 2022
Nominated for Student Employee of the Year	2011 & 2012
American Legion award	2008

MEMBERSHIP & ENGAGEMENT

Australian Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS)
Statistical Society of Australia (SSA), Victorian branch
American Statistical Association, district 4

REFERENCES

Professor Di Cook, PhD supervisor

Email: dicook@monash.edu, Office: +61 (0)3 9905 2608

Professor Kim Marriott, PhD supervisor

Email: kim.marriott@monash.edu, Office: +61 (0)3 9905 5525

DOCTORAL THESIS

- [1] Nicholas S Spyrisson. “Interactive and dynamic visualization of high-dimensional data”. en. PhD thesis. Monash University, Mar. 2022. URL: https://github.com/nspyrisson/thesis_ns/blob/master/docs/thesis_ns.pdf.

JOURNAL ARTICLES

- [2] Nicholas Spyrisson and Dianne Cook. “spinifex: an R Package for Creating a Manual Tour of Low-dimensional Projections of Multivariate Data”. en. In: *The R Journal* 12.1 (2020), p. 243. ISSN: 2073-4859. DOI: 10.32614/RJ-2020-027. URL: <https://journal.r-project.org/archive/2020/RJ-2020-027/index.html> (visited on 10/16/2020).
- [3] Stuart Lee et al. “The state-of-the-art on tours for dynamic visualization of high-dimensional data”. en. In: *WIREs Computational Statistics* (Dec. 2021), p. 21. ISSN: 1939-0068. DOI: 10.1002/wics.1573. URL: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/wics.1573> (visited on 12/10/2021).

SOFTWARE (R PACKAGES)

- [4] Nicholas Spyrisson and Dianne Cook. *spinifex: Manual Tours, Manual Control of Dynamic Projections of Numeric Multivariate Data*. 2021. URL: <https://CRAN.R-project.org/package=spinifex>.
- [5] Nicholas Spyrisson. *cheem: Interactively Explore the Support of Local Explanations of a Model*. 2022. URL: <https://CRAN.R-project.org/package=cheem>.

CONFERENCE PROCEEDINGS

- [6] Nicholas S. Spyrisson. “spinifex: visualizing local structure of higher dimensions”. en. In: Brisbane, Australia, 2018. URL: <https://user2018.r-project.org/poster/> (visited on 07/28/2020).
- [7] Madeleine Barrow, Jieyang Chong, and Nicholas Spyrisson. “Changes to Victorian Intraday Electricity Demand Following COVID-19 Restrictions”. en. In: *Melbourne Datathon 2020, Insights category*. Oct. 2020, p. 4. URL: https://github.com/nspyrisson/melb_datathon2020/blob/master/_paper/paper.pdf (visited on 02/09/2022).
- [8] Nicholas Spyrisson, Benjamin Lee, and Lonni Besançon. “”Is IEEE VIS *that* good?” On key factors in the initial assessment of manuscript and venue quality”. In: *IEEE AltVis Workshop*. type: article. July 2021. DOI: 10.31219/osf.io/65wm7. URL: <https://osf.io/65wm7/> (visited on 08/21/2021).