

# Stephen Tierney

## CONTACT

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ADDRESS: Discipline of Business Analytics,  
The University of Sydney Business School,  
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## EDUCATION

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2013 - 2017 PhD, Computer Science and Machine Learning

Charles Sturt University, Bathurst, Australia

**Thesis:** "Spectral Subspace Clustering: Algorithms and Practical Extensions"

**Advisor:** Prof. Junbin Gao

Studied machine learning with a focus on computer vision and image processing applications. I developed a number of novel methods in these fields involving the use of convex optimisation, manifold optimisation, big data optimisation and novel penalties.

**Awards:** "Faculty of Business, Justice and Behavioural Sciences Outstanding Thesis Prize"

2009 - 2012 Bachelor of Computer Science (Games Technology) (Honours)

Charles Sturt University, Bathurst, Australia

Graduated with First Class Honours.

## EXPERIENCE

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2018 - Present | Data Scientist at Sydney Informatics Hub  
Working on projects with external stakeholders such as NSW Department of Industry

2016 - Present | Lecturer and Tutor at University of Sydney

Semester 1, 2018:

- Lecturer, Content Creator and Head Tutor for BUSS6002 Data Science in Business
- Lecturer for QBUS5001 Quantitative Methods for Business

Semester 2, 2017:

- Lecturer, Content Creator and Head Tutor for QBUS6850 Machine Learning for Business.
- Head Tutor for BUSS6002 Data Science in Business.
- Tutor for QBUS6810 Statistical Learning and Data Mining.

Semester 1, 2017:

- Lecturer for QBUS5001 Quantitative Methods for Business
- Head Tutor for QBUS6840 Predictive Analytics

Semester 2, 2016:

- Head Tutor for QBUS6810 Statistical Learning and Data Mining

2017	Research Assistant at University of Sydney Research assistant under supervision of Prof. Junbin Gao.
2013 - 2016	Researcher at CSIRO Worked under the direction of Dr. Yi Guo on machine learning and computer vision problems on remote sensing data. This employment was part of the CSIRO PhD Top-up scholarship scheme.
2012	Research Assistant at Charles Sturt University Research assistant under supervision of Prof. Junbin Gao.
2011 - 2014	Casual Academic at Charles Sturt University Semester 1, 2014: <ul style="list-style-type: none"> <li>• Subject Coordinator for ITC368 Image Processing and Analysis</li> </ul> Semester 1, 2013: <ul style="list-style-type: none"> <li>• Subject Coordinator for ITC527 Concurrent Programming</li> </ul> Semester 2, 2011: <ul style="list-style-type: none"> <li>• Lecturer for QBUS5001 Quantitative Methods for Business</li> </ul> Semester 2, 2016: <ul style="list-style-type: none"> <li>• Casual Lecturer and Marker for ITC222 Computer Organisation</li> </ul>

## SCHOLARSHIPS, CERTIFICATES AND AWARDS

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2017	Faculty of Business, Justice and Behavioural Sciences Outstanding Thesis Prize
2013 - 2016	Australian Postgraduate Awards Scholarship
2013 - 2016	CSIRO PhD Top-up Scholarship
2014	DICTA14 Best Student Paper
2012	CSU Faculty of Business Honours Research Assistant Scholarship
2012	CSU Honours Scholarship
2012	CSU Honours SCF Exempt Award
2011	CSU Deans List for Academic Performance in Session One
2011	CSU School of Computing and Mathematics Prize for Academic Excellence in Third Year Games Technology
2009 - 2012	CSU Science Scholarship

## TECHNICAL SKILLS

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Programming Languages	Python, R, MATLAB, C, C++, Java, C#, Objective-C
Web Programming and Databases	Django, nginx, uWSGI, HTML, Javascript, SQL
Source control tools	Git, Github
Embedded Systems	Arduino
Command Line Interfaces	Unix-like shells
Typesetting	L <sup>A</sup> T <sub>E</sub> X

## PUBLICATIONS

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- 2016 | **Stephen Tierney**, Yi Guo, Junbin Gao. Efficient Sparse Subspace Clustering by Nearest Neighbour Filtering. Submitted to Neurocomputing.
- Stephen Tierney**, Junbin Gao, Yi Guo, Zhengwu Zhang. Low-Rank Representation over the Manifold of Curves. Submitted to JMLR.
- Stephen Tierney**, Yi Guo, Junbin Gao. Collaborative Low-Rank Subspace Clustering. Submitted to Neurocomputing.
- 2015 | Yi Guo, Junbin Gao, Feng Li, **Stephen Tierney** and Ming Yin. Low Rank Sequential Subspace Clustering. IJCNN15.
- Stephen Tierney**, Yi Guo, Junbin Gao. Segmentation of Subspaces in Sequential Data (Preprint available on arXiv).
- Stephen Tierney**, Yi Guo, Junbin Gao. Selective Multi-Source Total Variation Image Restoration. DICTA 2015.
- 2014 | **Stephen Tierney**, Yi Guo and Junbin Gao. Affinity Pansharpening and Image Fusion. DICTA 2014 (Best Student Paper).
- Stephen Tierney**, Yi Guo and Junbin Gao. The W-Penalty and its Application to Alpha Matting with Sparse Labels. DICTA 2014.
- Stephen Tierney**, Yi Guo and Junbin Gao. Subspace Clustering for Sequential Data. CVPR 2014.
- 2013 | **Stephen Tierney**, Geoff Bull and Junbin Gao. Image Matting for Sparse User Input by Iterative Refinement. DICTA 2013.
- 2012 | **Stephen Tierney** and Junbin Gao. Natural Image Matting with Total Variation Regularisation. DICTA 2012.

## OPEN SOURCE PROJECTS

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You can find my open source code releases relating to my publications and other personal projects at <https://github.com/sjtrny>.