

Stephen Tierney

CONTACT

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EDUCATION

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.

RESEARCH EXPERIENCE

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.

TEACHING EXPERIENCE

Semester 2, 2017 | **Casual Academic at University of Sydney**
QBUS6850 Machine Learning for Business
Lecturer and Head Tutor
This was a new course for USYD. I worked alongside Chao Wang and senior staff to develop the course structure and content. I was additionally responsible for development of tutorial material, delivery of 1 lecture per week, 4 tutorials per week and assignment/exam marking for over 160 enrolled students.

	<p>QBUS6810 Statistical Learning and Data Mining</p> <p>Tutor</p> <p>Delivered 2 tutorials per week and provided supplemental online support to students. Tutorials cover practical implementation of data science and time series techniques using Python.</p>
	<p>BUSS6002 Data Science in Business</p> <p>Head Tutor</p> <p>Developed tutorial material within a small team of 3 tutors, delivered 3 tutorials per week, produced supplemental online material such as vodcasts and performed marking duties.</p>
Semester 1, 2017	<p>QBUS5001 Quantitative Methods for Business</p> <p>Lecturer</p> <p>Delivered weekly lectures and supported students as one of four lecturers, for over 800 enrolled students. Material covers traditional statistical hypothesis testing and linear models.</p>
	<p>QBUS6840 Predictive Analytics</p> <p>Head Tutor</p> <p>Solely responsible for development of tutorial material, delivery of 7 tutorials per week and assignment/exam marking for over 250 enrolled students.</p>
Semester 2, 2016	<p>QBUS6810 Statistical Learning and Data Mining</p> <p>Head Tutor</p> <p>Solely responsible for development of tutorial material and delivery of 4 tutorials per week for over 170 enrolled students. Tutorials cover practical implementation of data science techniques using Python.</p>

Casual Academic at Charles Sturt University

Semester 1, 2014	<p>ITC368 Image Processing and Analysis</p> <p>Subject Coordinator</p> <p>Solely responsible for subject preparation (course structure, assignments and exam), lecturing, tutoring and marking.</p>
Semester 1, 2013	<p>ITC527 Concurrent Programming</p> <p>Subject Coordinator</p> <p>Solely responsible for subject preparation (course structure, assignments and exam), lecturing, tutoring and marking.</p>
Semester 2, 2011	<p>ITC222 Computer Organisation</p> <p>Casual Lecturer and Marker</p>

SCHOLARSHIPS, CERTIFICATES AND AWARDS

- 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

Programming Languages	MATLAB, C, C++, Java, Python, C#, Objective-C (iOS and OS X)
Web Programming and Databases	HTML, Javascript, SQL
Source control tools	Git, Github, SVN
Embedded Systems	Arduino
Command Line Interfaces	Unix-like shells
Typesetting	L ^A T _E X

PUBLICATIONS

- 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

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