La Trobe University

School of Engineering and Mathematical Sciences

Research outputs and the research-related activities for
30 June 2016 - 31 December 2016
(excluding conference papers not in regular journals)

Publications

L. Karantgis, P. Broadbridge, V. Lemiale.
Sloping saturated-unsaturated flow with outflow at seepage face.
(published on-line 29 Nov 2016)

G. Cairns, A. Hinić Galić, Y. Nikolayevsky.
Curvature properties of metric nilpotent Lie algebras which are independent of metric.
(published on-line 3 Nov 2016)

When probability trees don't work.
International Journal of Mathematical Education in Science and Technology, 47(6) (2016), 972-976

A hybrid expectation maximisation and MCMC sampling algorithm to implement
Bayesian mixture model based genomic prediction and QTL mapping.
BMC Genomics, 17(1) (2016), 1-21

Y.P.P. Chen, C. Johnson, P. Lalbakhsh, T. Caelli, G. Deng, D. Tay, S. Erickson, P.
Broadbridge, A. El Refaie, W. Doube, M.E. Morris.
Systematic review of virtual speech therapists for speech disorders.
Computer Speech & Language, 37 (2016), 98-128

G. Deng.
A generalized gamma correction algorithm based on the SLIP model.
EURASIP Journal on Advances in Signal Processing, 2016, 1-15
(published 6 June 2016)

G. Deng.
The symmetric generalized LIP model and its application in dynamic range
enhancement.

B. Thai, G. Deng, R. Ross.
A fast white balance algorithm based on pixel greyness.
G. Deng.  
A statistical framework for generalized linear image processing systems.  
(published on-line 1 October 2016)

G. Deng.  
Guided wavelet shrinkage for edge-aware smoothing.  
IEEE Transactions on Image Processing, 26(2) (2017), 900-914  
(accepted for publication November 2016)

G. Deng.  
Fast compressive bilateral filter.  
Electronics Letters, 53(3) (2017), 150-152  
(accepted for publication December 2016)

D.A. Fordham, S. Haythorne, B.W. Brook.  
Sensitivity Analysis of Range Dynamics Models (SARDM): Quantifying the  
influence of parameter uncertainty on forecasts of extinction risk from global change.  
Environmental Modelling & Software, 83 (2016), 193-197

A. Egri-Nagy, M. Jackson, J. Rhodes, B. Steinberg.  
On the atoms of algebraic lattices arising in q-theory.  
International Journal of Algebra and Computation  
(accepted for publication)

M. Jackson, T. Kowalski, T. Niven.  
Complexity and polymorphisms for digraph constraint problems under some basic  
constructions.  

M. Jackson, Edmond W.H. Lee.  
Monoid varieties with extreme properties.  
Transactions of the American Mathematical Society  
to appear  
doi: https://doi.org/10.1090/tran/7091


Kabaila, P. and Mainzer, R.  
Estimation risk for VaR and ES.  
Journal of Risk. (accepted for publication in 2016)
N. Ali, R. Lai.
A method of requirements change management for global software development.
Information & Software Technology, 70 (2016), 49-67

Tisdell, C. and Loch, B.
How useful are closed captions for learning mathematics via online video?
International Journal of Mathematical Education in Science and Technology, 48(2) (2017), 229-243

M. Hassani, R. Kippen, T.M. Mills.
Probability—a matter of life and death.

V. Matveev, Y. Nikolayevsky.
Locally conformally Berwald manifolds and compact quotients of reducible manifolds by homotheties.
Annales de l’Institut Fourier
http://aif.cedram.org/cgi-bin/toappear
(to appear on-line December 2016)

Y. Nikolayevsky, I. Tsartsaflis.
Cohomology of ℤ-graded Lie algebras of maximal class over ℤ₂.
J. Lie Theory, 27(2) (2017), 529-544

Y. Nikolayevsky, J.H. Park.
H-contact unit tangent sphere bundles of Riemannian manifolds.
Differential Geometry and its Applications, 49 (2016) 301 – 311

Aliasing-truncation errors in sampling approximations of sub-Gaussian signals.
IEEE Transactions on Information Theory, 62(10) (2016), 5831-5838

Generalised correlation index for quantifying signal morphological similarity.
Electronics Letters, 52(22) (2016), 1832-1834

Whittaker-Kotel'nikov-Shannon approximation of ϕ-sub-Gaussian random processes.
Journal of Mathematical Analysis and Applications, 443(2) (2016), 926-946

A. Olenko, V. Tsyganok.
Double entropy inter-rater agreement indices.

V.I. Patel, B. Uy, K.A. Prajwal, F. Aslani.
Confined concrete model of circular, elliptical and octagonal CFST short columns.
Steel and Composite Structures, 22(3) (2016), 497-520.

V.I. Patel, Q.Q. Liang, M.N.S. Hadi.
Nonlinear analysis of circular high strength concrete-filled stainless steel tubular slender beam-columns.  
Engineering Structures, 130 (2017), 1-13  
(published on-line 17 October 2016)

D. Li, B. Uy, V. Patel, F. Aslani.  
Behaviour and design of demountable steel column-column connections.  
Steel and Composite Structures, 22(2) (2016), 429-448

D. Li, B. Uy, F. Aslani, V. Patel.  
Analysis and design of demountable steel column-baseplate connections.  
Steel and Composite Structures, 22(4) (2016), 753-775

Confinement models for high strength short square and rectangular concrete-filled steel tubular columns.  

B. Uy, V. Patel, D. Li, F. Aslani.  
Behaviour and design of connections for demountable steel and composite structures.  
Structures, 9 (2017), 1-12  
(published on-line 17 June 2016)

M. Pratama, E. Lughofer, J. Lu, M-J. Er, S. Anavatti,  
Data-driven modelling based on recurrent interval-valued metacognitive scaffolding fuzzy neural network.  
Nerocomputing.  
(accepted for publication October 2016)

C. Zain, M. Pratama, E. Lughofer, M-J. Er.  
Evolving type-2 webs news mining.  
Applied Soft Computing  
(accepted for publication 22 Nov 2016)

M-J. Er, Y. Zhong, N. Wang, M. Pratama.  
Attention pooling-based convolutional neural networks for sentence modeling.  
Information Sciences, 373 (2016), 388-403

Response and predictor folding to counter symmetric dependency in dimension reduction.  
Australian and New Zealand Journal of Statistics, 58(4) (2016), 515-532

Effects of testosterone treatment on body fat and lean mass in obese men on a hypocaloric diet: a randomised controlled trial.  
BMC Medicine, 14:153 (2016).  
S. Morgenthaler, R.G. Staudte.  
Indicators of evidence for bioequivalence.  
doi: 10.3390/e18080291

R.G. Staudte.  
The shapes of things to come: probability density quantiles.  
(accepted for publication on 23 December, 2016; published on-line 12 Jan 2017)  
doi: 10.1080/02331888.2016.1277225

R.G. Staudte.  
Inference for quantile measures of kurtosis, peakedness, and tail-weight.  
Communications in Statistics - Theory and Methods, 46(7) (2017), 3148-3163  
(published on-line 15 April 2016)

H-T. Thai, B. Uy, Yamesri, F. Aslani.  
Behaviour of bolted endplate composite joints to square and circular CFST columns.  
Journal of Constructional Steel Research, 131 (2017), 68-82  
(accepted for publication 28 December 2016)

Trigonometric-series solution for analysis of laminated composite beams.  
(published on-line 15 October 2016)

H-T Thai, B. Uy.  
Rotational stiffness and moment resistance of bolted endplate joints with hollow or CFST columns.  
Journal of Constructional Steel Research 126 (2016),139-152

Neurocomputing  
(accepted for publication on 9 December 2016)

Insights into randomized algorithms for neural networks: practical issues and common pitfalls.  
Information Sciences, 382-383 (2017), 170-178  
(accepted for publication on 4 December 2016)

Real-time optimal control of tracking running for high-speed electric multiple unit.  
Information Sciences, 376 (2017), 202-215  
(accepted for publication on 10 September 2016)

High dimensional data regression using Lasso model and neural networks with random weights.
Information Sciences, 372 (2016), 505-517

Virtual unmodeled dynamics modelling for multivariable nonlinear adaptive control with decoupling design.
doi: 10.1109/TSMC.2016.2602826

Assessing short-term voltage stability of electric power systems by a hierarchical intelligent system.
IEEE Transactions On Neural Networks and Learning Systems, 27(8) (2016), 1686-1696

S. Wang, G. Deng and J. Hu.
A partial Hadamard transform approach to the design of cancelable fingerprint templates containing binary biometric representations.
Pattern Recognition, 61 (2017), 447-458
(accepted for publication August 2016)

S. Wang and J. Hu.
A blind system identification approach to cancelable fingerprint templates.
Pattern Recognition, 54 (2016), 14-22

Ruth F.G. Williams, D.P. Doessel.
Re-allocating Australia’s scarce mental health resources.

Ruth F.G. Williams.
Who Owns the Unexpected? Insights from Antigone for Don Lamberton’s economic question.
Prometheus, 33 (4) (2015), 421-430
(published on-line on 10 October 2016)

S.X. Yang, H. Zhen, Y.P.P. Chen.
Workload-based ordering of multi-dimensional data.
IEEE Transactions on Knowledge and Data Engineering, 28 (3) (2016), 831-844

Grants

Ani Desai and Mark Jois.
“Application of Smart Sensor Technology to Determine Feeding Behaviour in Beef Cattle”
$66,552 cash from Murdeduke Agriculture and DIIS
Andriy Olenko has been awarded a grant from the “Laboratoire d'Excellence”, Centre Européen pour les Mathématiques, la Physique et leurs interactions (CEMPI), Laboratoire de Mathématiques Paul Painlevé to be an invited researcher at the University of Lille 1 for 2 months in 2017, $15,000.

Dr Vipulkumar Patel received $3000 travel grant from Xi’an Jiaotong University, China to attend the Silk Road International Symposium, 2016.

Dr Robert Ross received $52,000 Research collaboration funding from IWN – Intelligent Water Networks Victoria.

**Professional and editorial appointments**

Phil Broadbridge has been appointed Chair of 4th International Electronic Conference on Entropy and Its Applications, Nov 21- Dec 1, 2017.

Phil Broadbridge has been appointed to the Accreditation Committee of the Australian Mathematical Society.

Ani Desai is the 2016 Award Winner of the VC Staff Award in the category of Research Excellence

Birgit Loch has been reappointed as Chair of the Standing Committee on Mathematics Education of the Australian Mathematical Society.

Dr Vipulkumar Patel is one of the guest editors for a special issue on the behaviour of concrete-encased composite and concrete-filled steel tubular columns. This special issue will be published in Advances in Civil Engineering.

Dr Vipulkumar Patel is appointed as a secretary of Australian Association for Steel-Concrete Composite Structures. He is also a director of La Trobe chapter for this association.

Justin Wang has been appointed as the Editor-in-Chief of International Journal of Machine Intelligence and Sensory Signal Processing, (Inderscience Publishers) (Oct 10, 2016~)

**Industry collaborations**

“Update of the national learning and teaching professional development unit.” $8,000

An agreement has been finalised for Laura Karantgis to be based at CSIRO Data 61 for the last part of her doctoral project, where Vincent Lemiale will be co-supervisor. Centre for Technology Infusion has received significant commercial income with details commercial-in-confidence.