Leto Peel

CONTACT INFORMATION

ICTEAM, Euler Building, Avenue Lemaître 4.

B-1348 Louvain-la-Neuve, Belgium

E-mail: leto.peel@uclouvain.be WWW: piratepeel.github.io Twitter: @PiratePeel

RESEARCH INTERESTS Machine Learning and Data Mining in Network Data Structures community detection, social network analysis, Bayesian statistics, graphical models, blockmodels, active learning, anomaly and change-point detection.

EDUCATION

University College London, London, UK

EngD, Virtual Environments, Imaging and Visualisation,

Mar 2009 - Aug 2013

• Thesis Topic: Predicting the Attributes of Nodes in Networks

Advisers: Dr Simon Julier, Prof John Shawe-Taylor
Examiners: Dr Mark Herbster, Dr Steve Gregory

University of Bristol, Bristol, UK

MEng., Knowledge Engineering,

Sep 2001 - Jul 2006

• Thesis Topic: Rule Based Uncertainty in the Semantic Web

Adviser: Prof Trevor Martin

EXPERIENCE

Université catholique de Louvain, Louvain-la-neuve, Belgium

FNRS Chargé de recherche

Oct 2017 to Sep 2020

• Project: Methods for detecting changes in the structure of complex networks

MOVE IN Louvain Research Fellow

Aug 2016 to Sep 2017

Project: Detecting the Large-scale Structures in Collections of Networks

Postdoctoral Research Associate

Aug 2015 to Aug 2016

Project: Mining and Optimization of Big Data Models

• Supervisor: Dr Jean-Charles Delvenne

Université de Namur, Namur, Belgium

Visiting Researcher

Aug 2015 to present

Supervisor: Dr Renaud Lambiotte

University of Colorado at Boulder, Boulder CO, USA

Postdoctoral Research Associate

Aug 2013 to Jul 2015

• Project: Statistical Inference for Detecting Structures and Anomalies in Networks

• Supervisor: Dr Aaron Clauset

University College London, London, UK

Postdoctoral Research Associate

Apr 2012 to Apr 2013

• Project: Crime, Policing and Citizenship

Supervisor: Prof John Shawe-Taylor

BAE Systems Advanced Technology Centre, Bristol, UK

Senior Research Scientist Jan 2011 to Dec 2011

Higher Research Scientist Jun 2008 to Dec 2010

Research Scientist Jul 2006 to May 2008

SHORT RESEARCH • Universidad Rovira i Virgili, Tarragona, ES (host: Alex Arenas) Mar 2019 VISITS • ISC-Sapienza, Rome, IT (host: Antonio Scala) Jan 2019 • MIT, MA, US (host: Michael Schaub) Mar 2018 • Tor Vergata, Rome, IT (host: Antonio Iovanella) Feb 2018 • CNRS, Paris, FR (host: Claire Lagesse) Jul 2016 • Harvard School of Public Health, MA, US (host: Dan Larremore)

AWARDS

• Publons Peer Review Awards Top 1% in Field, 2018

• Santa Fe Institute, NM, US (host: Cris Moore)

- Best speaker award at the 5th Mediterranean School on Complex Networks, 2018
- 15th recipient of the prestigious Zachary Karate Club Club prize, 2018
- One of the 20 Best Reviewers at the 12th International AAAI Conference on Web and Social Media (ICWSM), 2018

Aug 2014

Jan 2014

- Best Oral Presentation Award at the 6th International Conference on Complex Networks and Their Applications, 2017
- 3rd in Best Student Paper Award at the 14th International Conference on Information Fusion (Prize USD 1000), 2011
- Received Honourable Mention in the category of Best Student Paper Award at the 13th International Conference on Information Fusion, 2010
- Winner of the IEEE Prognostics and Health Management Data Challenge, 2008 (IEEE GOLD Category) (Prize USD 2500)
- BAE SYSTEMS Bronze Chairman's Award for Innovation for Intelligent Fault Diagnosis Technologies, 2008
- L.N. Fryer Physics Prize, 2001

GOOGLE SCHOLAR http://scholar.google.com/citations?user=GR-yASwAAAAJ&hl=en

Papers under REVIEW

"Community detection in networks with unobserved edges"

T. Hoffman, L. Peel, R. Lambiotte, N. Jones

Submitted 2018 (arXiv:1808.06079)

Preprint featured on the PLOS Complexity Channel, Sept. 2018

REFEREED **PUBLICATIONS** "Individual perception dynamics in drunk games"

A. Antonioni, L. A. Martinez-Vaguero, C. Mathis, L. Peel, M. Stella

Physical Review E, 2019 99 (5): 052311 (arXiv:1807.08635)

"The architecture of an empirical genotype-phenotype map" J. Aguilar-Rodríguez, L. Peel, M. Stella, A. Wagner, J. Payne

Evolution, 2018 72 (6): 1242-1260

"Multiscale mixing patterns in networks"

L. Peel, J-C. Delvenne, R. Lambiotte

Proc. Natl. Acad. Sci. USA, 2018 115 (16): 4057-4062 (arXiv:1708.01236)

"The ground truth about metadata and community detection in networks"

L. Peel, D. Larremore, A. Clauset

Science Advances, 2017 3: e1602548 (arXiv:1608.05878)

"Graph-based semi-supervised learning for relational networks"

SIAM Int. Conf. on Data Mining (SDM), Apr 27-29, 2017 (arXiv:1612.05001) acceptance rate 26%

"Detectability thresholds and optimal algorithms for community structure in dynamic networks"

A. Ghasemianlangroodi, P. Zhang, A. Clauset, C. Moore, L. Peel

Physical Review X, 2016 6 (3): 031005 (arXiv:1506.06179)

"Predicting sports scoring dynamics with restoration and anti-persistence"

L. Peel, A. Clauset

IEEE Int. Conf. on Data Mining (ICDM), Nov 14-17, 2015 (arXiv:1504.05872)

acceptance rate 18.2% (regular paper 8.4%)

"Detecting change points in the large-scale structure of evolving networks"

L. Peel, A. Clauset

AAAI Conf. on Artificial Intelligence (AAAI), Jul 25–30, 2015. acceptance rate 26.7%

(arXiv:1403.0989)

"Active discovery of network roles for predicting the classes of network nodes"

L. Peel

Journal of Complex Networks, 2014 3 (3): 431-449.

(arXiv:1312.7258)

"Maritime anomaly detection using Gaussian process active learning"

K. Kowalska, L. Peel

Int. Conf. on Information Fusion (FUSION), July 9–12, 2012.

"Estimating parameters for selecting community detection algorithms"

L. Peel

Journal of Advances in Information Fusion. 6(2):119-130. 2011.

"Topological feature based classification"

L. Peel

Int. Conf. on Information Fusion (FUSION), Jul 5-8, 2011.

(arXiv:1110.4285)

"Capturing time-of-flight data with confidence"

M. Reynolds, J. Doboš, L. Peel, T. Weyrich, G.J. Brostow

IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), Jun 20–25, 2011. *acceptance rate 26.4%*

"Estimating parameters for selecting community detection algorithms"

L. Peel

Int. Conf. on Information Fusion (FUSION), Jul 26–29, 2010.

(arXiv:1010.5377)

"Data driven prognostics using a Kalman filter ensemble of neural network models"

L. Peel

IEEE Conf. on Prognostics and Health Management (PHM), October 6-9, 2008.

OTHER PUBLICATIONS

"Dynamical Game Theory"

A. Antonioni, L. A. Martinez-Vaquero, N. Mathis, **L. Peel**, M. Stella *Proc. of the Santa Fe Institute Complex Systems Summer School (CSSS)*, 2014

"Change-point detection in temporal networks using hierarchical random graphs"

L. Peel, A. Clauset

ACM SIGKDD Works. on Outlier Detection & Description under Data Diversity (ODD² 2014), Aug 24, 2014.

"Supervised blockmodelling"

L. Peel

ECML/PKDD Works. on Collective Learning and Inference in Structured Data(CoLISD), Sep 28, 2012. (arXiv:1209.5561)

"Fast maritime anomaly detection using kd-tree Gaussian processes"

J. Will, L. Peel, C. Claxton

IMA Mathematics in Defense Conference, Oct 20, 2011.

PATENTS

L. Peel, Detecting a least one community in a network. *International Application No.: PCT/GB2011/050464*, Publication Date: 22.09.2011 International Filing Date: 09.03.2011

INVITED TALKS

Oct, 2, 2019 Sep 6, 2019 Jul 17-20, 2019 Jul 3-5, 2019 Mar 18, 2019 Feb 28, 2019 Jan 25, 2019
Dec 14, 2018 Nov 14, 2018

 Telecommunications and microwaves seminar, KU Leuven, BE, Dynamics on and of Complex Networks XI, Thessaloniki, GR, 5th Mediterranean School of Complex Networks, Salina, IT, Int. Works. on Comp. Economics and Econometrics, Rome, IT, Fondazione Bruno Kessler, Trento, IT, Institute for Data Systems and Society, MIT, Cambridge, MA, US, Center for Data Science, New York Univ., New York, NY, US, Donnelly Centre, Univ. of Toronto, CA, University of Rome Tor Vergata, Rome, IT, Institute of Cognitive Sciences and Technologies, Rome, IT, 9th Int. Conf. of the ERCIM WG CMStatistics, Seville, ES, Networks Seminar, Dept. of Bus. Admin., Univ. of Zurich, CH, Dept. of Computer Science, Univ. of Exeter, UK, Complex Systems Inst. of Paris (ISC-PIF), CNRS, FR, Dept. of Computer Science, Lancaster Univ., UK, Inference on Networks workshop, Santa Fe Institute, NM, US, AI Lab, Vrije Universiteit Brussel, BE, Meyers Lab, Dept. of Int Bio, Univ. of Texas, Austin, TX, US, Dynamics Of and On Networks works., Santa Fe Institute, NM, US, Network Science Lab, Harvard School of Public Health, MA, US, Dynamical Systems Seminar, CU Boulder, CO, US, Invited Talk, Santa Fe Institute, NM, US, Euro. Partners Against Corruption 12th Conf., Barcelona, ES, UCL CPC Project Launch Event, Univ. College London, UK, IEEE Conf. on Prognostics and Health Mgmt., Denver, CO, US, 	Oct 5, 2018 Sep 27, 2018 Sep 7, 2018 Jun 26, 2018 Apr 11, 2018 Mar 12, 2018 Feb 28, 2018 Feb 26, 2018 Feb 21, 2018 Feb 20, 2018 Dec 10, 2016 Oct 25, 2016 Jul 26, 2016 Jul 21, 2016 Feb 1, 2016 Dec 14, 2015 Dec 3, 2015 Jan 26, 2015 Dec 18, 2014 Aug 29, 2014 Mar 20, 2014 Jan 10, 2014 Nov 22, 2012 May 18, 2012 Oct 6-9, 2008
 10th Conf. on Complex Networks (Complenet), Tarragona, ES, Complex Networks and their Applications, Cambridge, UK, 	Mar 18-21, 2019 Dec 12, 2018
The 2018 Conf. on Complex Systems (CCS), Thessaloniki, GR,	Sep 25, 2018
The 2018 Conf. on Complex Systems (CCS), Thessaloniki, GR,	Sep 24, 2018
DATAM 2018, CCS Satellite, Thessaloniki, GR,	Sep 26, 2018
 People, places things, NetSci Satellite, Paris, FR, 	Jun 12, 2018
Statistical Inference for Network Models, NetSci Satellite, Paris, FR,	Jun 11, 2018
 7th Belgian Network Research Meeting, Ghent, BE, 	Dec 6, 2017
 Int. Conf. on Complex Networks and their Applications, Lyon, FR, 	Dec 1, 2017
 The 2017 Conf. on Complex Systems (CCS), Cancun, MX, 	Sep 19, 2017
 The 2017 Conf. on Complex Systems (CCS), Cancun, MX, 	Sep 19, 2017
 The 2017 Conf. on Complex Systems (CCS), Cancun, MX, 	Sep 18, 2017
Int. Conf. on Network Science (NetSci), Indianapolis, IN, US,	Jun 21, 2017
Statistical Inference for Network Models works., NetSci2017, IN, US,	Jun 20, 2017
Machine Learning in Network Science works., NetSci2017, IN, US, Machine Learning Conf. of the Boards of the	Jun 19, 2017
Machine Learning Conf. of the Benelux (BeneLearn), Eindhoven, NL, CLAN Let Conf. on Data Mining (CDM), Hayatan, TX, LIC. CLAN Let Conf. on Data Mining (CDM), Hayatan, TX, LIC.	Jun 9, 2017 Apr 28, 2017
 SIAM Int. Conf. on Data Mining (SDM), Houston, TX, US, 8th Workshop on Complex Networks (CompleNet), Dubrovnik, HR, 	Anr 28 2017
	Mar 23, 2017
 8th Workshop on Complex Networks (CompleNet), Dubrovnik, HR, 	Mar 23, 2017 Mar 21, 2017
 8th Workshop on Complex Networks (CompleNet), Dubrovnik, HR, The 2016 Conf. on Complex Systems (CCS), Amsterdam, NL, 	Mar 23, 2017 Mar 21, 2017 Sep 22, 2016
 8th Workshop on Complex Networks (CompleNet), Dubrovnik, HR, The 2016 Conf. on Complex Systems (CCS), Amsterdam, NL, The 2016 Conf. on Complex Systems (CCS), Amsterdam, NL, 	Mar 23, 2017 Mar 21, 2017 Sep 22, 2016 Sep 22, 2016
 8th Workshop on Complex Networks (CompleNet), Dubrovnik, HR, The 2016 Conf. on Complex Systems (CCS), Amsterdam, NL, 	Mar 23, 2017 Mar 21, 2017 Sep 22, 2016

Conference Posters

CONTRIBUTED

TALKS

• L. Peel, Graph-based semi-supervised learning for relational networks. SIAM International Conference on Data Mining, April 2017

Sep 30, 2015

Aug 24, 2014

Jul 3, 2014

Jun 5, 2014

Jul 9, 2012

Jul 6, 2011

Jul 26, 2010

Sep 28, 2012

• 5th Belgian Network Research Meeting, Namur, BE,

• Int. Conf. on Information Fusion (FUSION), SG,

Outlier Detection & Description under Data Diversity, NY, US,

• Int. Conf. on Network Science (NetSci), Berkeley, CA, USA,

• Int. Conf. on Information Fusion (FUSION), Chicago, IL, US,

• Int. Conf. on Information Fusion (FUSION), Edinburgh, UK,

• Complex Systems Summer School, Santa Fe Institute, NM, US,

• Collective Learning and Inference in Structured Data, Bristol, UK,

- L. Peel, D. Larremore, A. Clauset, The ground truth about metadata and community detection in networks. *Conference on Complex Networks*, December 2016
- L. Peel, D. Larremore, A. Clauset, The ground truth about metadata and community detection in networks. *7th Workshop on Complex Networks*, March 2016
- L. Peel, A. Clauset, Detecting large-scale changes in the structure of evolving networks. *29th AAAI Conference on Artificial Intelligence*, January 26, 2015.
- T. Cheng, K. Bowers, P. Longley, J. Shawe-Taylor, R. Davenport, S. Moat, **L. Peel**, Crime, policing and citizenship. *RCUK Global Uncertainties Ideas and Beliefs Showcase Event*, October 1, 2012.
- L. Peel, Inference of abnormal behaviour in shipping vessels. CPC Launch Event, May 18, 2012.
- L. Peel, Topological feature based classification. *Machine Learning Summer School*, September 4–17, 2011.

FUNDING

Workshop support fund (WWCS18),

7,500 EUR

Workshop organiser, (Co-organisers: S. Selakovic, Q. Feng, J. Garcia-Bernardo) *multiple sources: (Utrecht Uni. UNamur, Corpnet, CSS)*, 2018

Integrated response for infectious disease surveillance: Development and application of AI models for TB control 1,133,717 EUR

Technical and scientific manager, (Pls: J-C. Delvenne, M. Delmée, X. Morelle) *Innoviris Team Up*, 2017

Methods for detecting changes in the structure of complex networks

230,700 EUR

Individual fellowship

FNRS Chargé de Recherche, 2017-20

DataBeers Brussels 3,968 EUR

Event organiser

multiple sources: (VUB, ISACA, Dataminded, UCL, Dataiku, B&D), 2016-19

Detecting large-scale structures in collections of networks 112,000 EUR

Individual fellowship

MOVE-IN Louvain (co-funded by Marie-Curie actions), 2016-7

Travel fellowships (total) 2,155 EUR

Individual travel fellowship

FNRS, 2015-7

Maritime wide area surveillance using AIS data 300,000 GBP

Project manager and technical lead

BAE Systems TTP, 2011

Role detection in networks 100,000 GBP

Project manager and technical lead

BAE Systems TTP, 2010

PRESS • Community Detection

phys.org Jenna Marshall, May 4, 2017 (also in Science Newsline and Eurekalert)

Sports Scoring

Clyde Street Keith Lyons, February 21, 2017 **Clyde Street** Keith Lyons, August 5, 2017

• Crime, Policing and Citizenship

The Guardian Ami Sedghi, October 30, 2012

ACADEMIC SERVICE Editorial

Guest Editor, Applied Network Science Special Issue of the 6th International Workshop on Complex Networks and Their Applications, 2018

Workshop Organiser

Winter Workshop on Complex Systems 2018

Co-organisers: Sanja Selakovic, Qingyi Feng, Javier Garcia-Bernardo

Utrecht, The Netherlands. February, 2018

Belgian Network Research Meeting (BeNet) 2016

Co-organisers: Sophie Béreau, Jean-Charles Delvenne, Yerali Gandica, Leo Gutierrez, Mauro Faccin, Michael Schaub

Louvain-la-neuve, Belgium. December, 2016

Conference on Complex Systems 2016 workshop on Coarse-graining Complex Systems

Co-organisers: Mauro Faccin, Renaud Lambiotte, Michael Schaub

Amsterdam, The Netherlands. September 21, 2016

NetSci 2015 2nd workshop on Statistical Inference for Network Models

Co-organisers: Aaron Clauset, Abigail Z. Jacobs and Dan Larremore

Zaragoza, Spain. June, 2015

NIPS 2014 workshop on Networks: From Graphs to Rich Data

Co-organisers: Edo Airoldi, David Choi, Aaron Clauset and Johan Ugander

Montreal, Quebec, Canada. December 13, 2014

NetSci 2014 workshop on Statistical Inference for Network Models

Co-organisers: Aaron Clauset, Abigail Z. Jacobs and Dan Larremore

Berkeley, California, USA. June 2, 2014

Technical Program Committee Member

International Workshop on Machine Learning with Graphs (MLG)	2019
International Workshop on Dynamics on and of Networks (DYNO)	2018
SIAM Workshop on Network Science (NS)	2018
International Conference on Complex Networks (CompleNet)	2018
International Conference on Complex Networks and their Applications	2017 – 2019
Workshop on Data Science for Human Performance in Social Networks	2017
International Conference on Social Informatics (SocInfo)	2017 – 2018
International School and Conference on Network Science (NetSci)	2017, 2019
World Wide Web Conference (WWW)	2017 – 2019
AAAI Conference on Artificial Intelligence (AAAI)	2016 - 2019
AAAI Conference on Web and Social Media (ICWSM)	2016 - 2019
ACM International Conference on Web Search and Data Mining (WSDM)	2016
SDM Workshop on Mining Networks and Graphs	2015
ACM Web Science Conference (WebSci)	2014
International Conference on Information Fusion (FUSION)	2010 - 2012

Reviewer

Journals

Algorithms, Applied Network Science, BMC Bioinformatics, Chaos, Data Mining and Knowledge Discovery, Entropy, Europhysics Letters, IEEE Communications Magazine, Journal of Machine Learning Research, Journal of Statistical Mechanics, Nature Scientific Reports, Neural Computing and Applications, New Journal of Physics, PeerJ Computer Science, Physical Review E, Physical Review Letters, Physical Review X, PLOS One, Proceedings of the IEEE, Science Advances, Social Network Analysis and Mining, Sustainability, Transactions on Knowledge Discovery from Data, Transactions on Network Science and Engineering, Transactions on Pattern Analysis and Machine Intelligence, Transactions on Signal Processing

Conferences

AAAI (2014, 2016-2019), CompleNet (2018), Complex Networks (2017-2019), FUSION (2010-2012), ICWSM (2014-2019), NetSci (2017, 2019), SocInfo (2017-2018), SC (2017-2018), WebSci (2014), WSDM (2016), WWW (2014-2015, 2017-2019)

Workshops

Benelux meeting on systems and control (2017), Belgian Network Research Meeting (2016), CCS Corse-graining complex systems (2016), Data Science for Human Performance in Social Networks (2017), NetSci workshop on Statistical Inference for Network Models (2014), NIPS workshop on Networks: From Graphs to Rich Data (2014), SDM Workshop on Mining Networks and Graphs (2015)

	Other Service Roles Steering committee member Winter Workshop on Complex Systems	2018 – 2021
	Publicity Chair International Conference on Complex Networks and Their Applications	2018 – 2019
	Advisory panel member W. England Academic Health Science Network Digital Engagement Platform	2017 – 2018
	Elected council member Complex Systems Society	2016 – 2019
STUDENT ADVISING	Doctoral Students Matteo Cinelli (with A. Iovanella), Uni. of Rome Tor Vergata Leonardo Gutierrez Gomez (with J-C. Delvenne), ICTEAM, UCLouvain Amir Ghasemian (with A. Clauset), Comp. Sci., CU Boulder	2017 - 2019 2016 - 2019 2015 - 2016
	Masters Students Kira Kowalska (intern), BAE Systems ATC / Eng. Maths, U. of Bristol	2011
	Undergraduate Students Henri Devillez (with M. Faccin), Applied Maths, UCLouvain Margerie Huet (with M. Faccin), Elec. Eng., UCLouvain Robert Cazaciuc (intern), BAE Systems ATC / Comp. Sci, U. of York Chris Howarth (intern), BAE Systems ATC / Maths, U. of Bath Robert Presley (intern), BAE Systems ATC / Maths, U. of Bath	2016 2016 2011 2009 – 2010 2008
TEACHING	 University Courses Algorithms in data science LINMA 2472 (Graduate) Lecturer – UCLouvain Algorithms in data science LINMA 2472 (Graduate) Lecturer – UCLouvain Integer Programming LINMA 2450 (Graduate) Teaching Assistant – UCLouvain Algorithms CSCI 3014 (Undergraduate) Guest Lecturer – University of Colorado Networks CSCI 5352 (Graduate) 	Autumn 2018 Autumn 2017 Autumn 2015 Spring 2014 Autumn 2014
	Guest Lecturer – University of Colorado Networks CSCI 5352 (Graduate) Guest Lecturer – University of Colorado	Autumn 2013
	 Tutorial Seminars Network inference in practice. Mediterranean School of Complex Networks, Salina, Italy. September, 2019 Network inference in practice. Mediterranean School of Complex Networks, Salina, Italy. September, 2018 Philosophy and practice of community detection Winter Workshop on Complex Systems, Petnica Science Centre, Serbia. Februal Philosophy and practice of community detection AsCII Tutorial Seminar, UCLouvain, Belgium. March 2017 	ary 2017
OUTREACH	DataBeers Brussels Founder and Organiser with Jelena Grujic, Johan Loeckx, and Christina Makarona	2016 – present

Recurring public outreach and networking event (http://databeers.brussels/)

• May 2019

Speakers: Geraint Wiggins, Aleksandra Vercauteren, Fariba Karimi, David Bol

• March 2019

Speakers: Kevin Françoisse, Marina Radulaški, Bart Smeets, Ann Dooms

January 2019

Speakers: Piia Karjalainen, Jelle Grammens, Danielle Marinazzo, Sarah Baatout

October 2018

Speakers: Hannelore Aerts, Alexandre Bovet, Wouter Denayer, Arne Coutteau

May 2018

Speakers: Robert Calderbank, Ingrid Daubechies, Pierre-Henri Golard, Katrien Beuls, Gert de Geyter

March 2018

Speakers: Luc Steels, Aimee Coelho, Julien Hendrickx, Maarten Lambrechts

January 2018

Speakers: Gautier Krings, Ellie D'Hondt, Michael Gillon, Genevieve Quek

November 2017

Speakers: Lisa Truyers, Leen Dieltjens, Karim Douieb, Baldwin Berges, Vsevolod Salnikov, Tias Guns

• September 2017

Speakers: Jerome Kunegis, Kris Peeters, Vassilis Syropoulos, Rosanna Kurrer

May 2017

Speakers: Winnie Poncelet, Shamma Raghib, Daniel Perez, Bavo Van den Heuvel

November 2016

Speakers: Christina Makarona, Pierre Deville, Marc Vael, Pieter Colpaert

SCHOOLS AND COURSES ATTENDED

- Mediterranean School of Complex Networks, Sicily, 2015
- Summer Teaching as Research Institute for Post-docs in Engineering (STRIPE), University of Colorado, Boulder, Colorado, USA, 2014
- Complex Systems Summer School, Santa Fe Institute, Santa Fe, New Mexico, USA, 2014
- Machine Learning Summer School, MLSS Series, Bordeaux, France, 2011
- Pattern Analysis and Time Series Modelling, Aston University, Aston, UK, 2008
- Simultaneous Localisation And Mapping Summer School, SLAM Summer School Series, Oxford, UK. 2006
- PRINCE 2 Foundation and Practitioner Project Management, OCG, UK, 2006

HARDWARE AND Computer Programming:

SOFTWARE SKILLS • Python, Java, C++, JavaScript, SQL, Prolog, Fril, Hadoop, Html

Numerical Analysis:

Numpy/Scipy, MATLAB, R

Desktop Editing and Production Software:

 Vim, Scite, T_EX (L^AT_EX, BIBT_EX), Microsoft Office, OpenOffice.org, Google Docs, InkScape, D3.js, Matplotlib

Operating Systems:

Microsoft Windows family, Linux