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# Jérémie Clos

## Education

2012–2019 **PhD**, *Robert Gordon University*, Aberdeen.
PhD in Artificial Intelligence

2011–2012 **MSc**, *University of Toulouse*, Toulouse, *With Distinction.*
MSc in Information Retrieval and Artificial Intelligence

2010–2011 **Hons**, *Robert Gordon University*, Aberdeen, *2:1.*
Bachelor (Hons) in Computing

2006–2010 **BSc**, *University of Toulouse*, Toulouse.
Bachelor in Computer Science

## PhD research

Title *Representation and Learning Schemes for Argumentation Mining*

Supervisors Prof. Nirmalie Wiratunga, Dr. Stewart Massie, Prof. Joemon Jose, Dr. Guillaume Cabanac

Key topics machine learning, opinion mining, stance detection

Description This project focuses on the study of representation and learning schemes for argumentation stance mining from social media content, in order to enable fine-grained debate analysis. Funding for this research was provided by a SICSA prize studentship in the themes of Next Generation Internet and Modelling and Abstraction. I particularly focus on the use of a shallow computational graph for stance lexicon extraction.

## Master thesis

Title *Predicting Entry Points in Q&A Systems*

Supervisors Dr. Guillaume Cabanac, Prof. Mohand Boughanem, Dr. Henri Prade

Key topics machine learning, information retrieval, social media mining

Description This work is an investigation in engineering features to enhance entry point prediction in Q&A systems. We focus on modelling answer complexity using compression ratios. This research was done in the information retrieval team of the University of Toulouse computer science research laboratory.

## Research experience

07/2018–07/2019 **Research fellow**, *University of Nottingham*, Nottingham.
Research fellow role on the ENLIVEN project.

- Design and development of the ENLIVEN IDSS prototype.
- Design and implementation of the natural language processing ENLIVEN module.
- Dissemination and demonstration of the IDSS prototype.

09/2017–12/2017 **Research assistant**, *Robert Gordon University*, Aberdeen.
DataLab-funded project with the National Engineering Laboratory (NEL).

- Performing a systematic study of data analysis techniques for drift prediction in flow modelling.
- Investigating the robustness of modern machine learning methods for extremely budgeted learning, with training sets restricted to a dozen data points.
- Developing a R toolkit to facilitate the exploration and extension of the current methodology. We presented the toolkit during our closing meeting in December 2017.

09/2015–04/2017 **Data scientist/applied researcher**, *Cognitive Geology*, Edinburgh.
Research and development team of the core product of Cognitive Geology.

- Investigating modern regression techniques for geological modelling.
- Performing research and implementation of heuristic-constrained logistic fitting algorithms to analyse geological data.
- Performing research and implementation of fast grid splitting algorithms for geological modelling.

03/2009–06/2012 **Research assistant**, *IRIT Research Lab*, Toulouse (France).
Multiple research projects as undergraduate research assistant.

- **Summer 2012**: Multiple small projects for members of the information systems team: paper translation, literature review, and prototype development.
- **Summer 2011**: METHODEO project, on the evaluation of distributed indexing systems for large multimedia archives for large-scale surveillance.
- **Summer 2010**: LINDO project, on the implementation of an open system for indexing and retrieval of multimedia objects in large distributed archives.
- **Spring–Summer 2009**: CERISE project, on the implementation of a systems to systems interface engineering, and study of impact analysis and data traceability in large-scale engineering projects.

## Teaching experience

10/2019–current **Teaching associate**, *University of Nottingham*, Nottingham.

As module convener:

- Database systems, interfaces and software design principles.
- Database systems and interfaces.
- Computer graphics.

As tutorial and lab helper: Programming (PGT), Programming and Algorithms, Software Maintenance, Fundamentals of Artificial Intelligence, Programming Paradigms, Data Modelling and Analysis

07/2018–10/2019 **Teaching assistant (hourly)**, *University of Nottingham*, Nottingham.

As tutorial and lab helper: Fundamentals of Artificial Intelligence, Programming Paradigms, Data Modelling and Analysis

01/2018–07/2018 **Full-time teaching assistant**, *University of Nottingham*, Nottingham.

As tutorial and lab helper: Databases and Interfaces, Fundamentals of Artificial Intelligence, Programming Paradigms, Software Engineering, Artificial Intelligence Methods, Computer Graphics, Computer Security, Data Modelling and Analysis, Games, Software Engineering Management

09/2012–06/2014 **Teaching assistant (hourly)**, *Robert Gordon University*, Aberdeen.

As tutorial and lab helper: Adaptive Intelligent Systems, Data Mining, Database Systems, Introduction to Databases

## Supervision experience - Masters

2019–2020 Nan Zhang - *An Active Learning-based Open Source Labelling Application.*

Ruijie Li - *Health-Oriented Food Recommender System.*

Sikha Kumari Gupta - *A Study of Data Augmentation for Defect Detection.*

Yang Zhang - *A CBR System for Semi-Automated Essay Marking.*

Yijing Gao - *A Study of Language Transfer for Cross-Lingual Sentiment Analysis.*

Zhuo He - *GAN-based Data Augmentation for Mental Workload Classification.*

2018–2019 Chang Liu - *A Study of Economics Features for Housing Price Prediction.*

2017–2018 Talal Abulnaja - *An Open Source System for Sleep Apnoea Monitoring.*

## Supervision experience - Bachelors

2019–2020 Yosua Muliawan - *Investigating Machine Learning Approaches for Predominant Musical Instrument Recognition in Polyphonic Music.*

Nicolas Bryan - *Person Identification using functional near-infrared spectroscopy.*

2018–2019 Aaron Drummond - *A Study of Machine Learning Approaches for Mental Workload Estimation based on Functional Near Infrared Spectroscopy.*

## Administrative experience

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| 2019–Current | Coordinator of the teaching assistants for the School of Computer Science. |
| | Helper in the organisation of the local UKIEPC programming contest. |
| 2017–2019 | Main organiser of the RGU-AI research weekly team seminars, administrator of the associated mailing list and Slack channel. |
| 2017 | Organisation and bidding team of the 2017 ECIR conference. |
| 2015 | Organising team of the 2015 SICSA workshop on Mining Social Media. |
| 2014–2015 | Organiser of the monthly IDEAS PhD Computer Science student seminars. |

## Presentations

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| Paper presentations | IJCAI-XAI 2017 - IJCAI Workshop on Explainable AI.<br>TPDL 2017 - Theory and Practice of Digital Libraries.<br>ECIR 2017 - European Conference in Information Retrieval.<br>LDK 2017 - Language, Data and Knowledge.<br>ECA 2015 - European Conference on Argumentation.<br>SWAM 2014 - SICSA Workshop on Argument Mining. |
| Poster presentations | ECIR 2017 - European Conference in Information Retrieval.<br>SICSA PhD conference 2015.<br>IDEAS symposium 2015.<br>SICSA PhD conference 2014.<br>IDEAS symposium 2014.<br>SICSA PhD conference 2013. |
| Miscellaneous | 2013–2014: PhD student seminar organiser in the Robert Gordon University. |

## Awards

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| 2015 | SICSA Prize Studentship: 3-year funding for PhD in a SICSA university. |
| 2015 | EU scholarship: European funding to attend the Summer School in Information Foraging |
| 2014 | SICSA Summer School bursary: funding to attend the SICSA Summer School on Argumentation. |
| 2014 | SICSA Travel funding: travel and accommodation funding for the Scottish Workshop on Argument Mining. |
| 2013 | SICSA Travel grant: travel funding for the Scottish Workshop on Information Retrieval. |

## Programming skills

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| Python | Machine learning research and development. Experience with Scikit-learn, Numpy and Tensorflow for algorithm development. |
| Java | Teaching, research and general development. |
| C# | Research prototype development. |
| R | Statistical analysis and visualisation. |
| SQL | Mostly teaching, with some light use in research work. |

## General computing skills

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| Version control | Git, TFS |

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| Databases | Oracle, MSSQL |
| Python toolkits | Scikit-learn, Tensorflow |
| R toolkits | Caret, ggplot2 |
| Scientific writing | LaTeX, Markdown |
| Others | Unity (teaching), Unreal engine (teaching) |
| Markup languages | HTML, XML |

## Scientific interests

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| Social media mining | Argument mining, sentiment analysis, propaganda detection. |
| Digital health | Monitoring and management of mental health using natural language processing. |

## Languages

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| French | Native. |
| English | Fluent. |
| Mandarin Chinese | Beginner (HSK2). |
| Italian | Beginner. |

## References

*(References are listed by decreasing level of recency of employment.)*

[1] Rong Qu
Associate Professor.
rong.qu@nottingham.ac.uk
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[2] Nirmalie Wiratunga
Professor of Intelligent Systems.
n.wiratunga@rgu.ac.uk
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[3] Guillaume Cabanac
Associate Professor.
guillaume.cabanac@univ-tlse3.fr
+33 (0) 5615 57273

## Publications


[1] Jérémie Clos, Rong Qu, and Jason Atkin. Information Retrieval for Evidence-Based Policy Making applied to Lifelong Learning. 2019.

[2] Jérémie Clos, Anil Bandhakavi, Nirmalie Wiratunga, and Guillaume Cabanac. Predicting emotional reaction in social networks. In *European Conference on Information Retrieva*l, pages 527–533. Springer, Cham, 2017.

[3] Jérémie Clos and Nirmalie Wiratunga. Lexicon induction for interpretable text classification. In *International Conference on Theory and Practice of Digital Libraries*, pages 498–510. Springer, Cham, 2017.

[4] Jérémie Clos and Nirmalie Wiratunga. Neural induction of a lexicon for fast and interpretable stance classification. In *International Conference on Language, Data and Knowledge*, pages 181–193. Springer, Cham, 2017.

[5] Jérémie Clos, Nirmalie Wiratunga, Joemon Jose, Stewart Massie, and Guillaume Cabanac. Towards argumentative opinion mining in online discussions. In *Proceedings of the SICSA Workshop on Argument Mining*, page 10, 2014.

[6] Jérémie Clos, Nirmalie Wiratunga, and Stewart Massie. Towards explainable text classification by jointly learning lexicon and modifier terms. In *IJCAI Workshop on Explainable Artificial Intelligence*, 2017.

[7] Jérémie Clos, Nirmalie Wiratunga, Stewart Massie, and Guillaume Cabanac. Shallow techniques for argument mining. In *European Conference on Argumentation* (ECA 2015), volume 63, pages pp–341, 2015.

[8] Kyle Martin, Nirmalie Wiratunga, Sadiq Sani, Stewart Massie, and Jérémie Clos. A convolutional siamese network for developing similarity knowledge in the SelfBACK dataset. 2017.

[9] Kyle Martin, Nirmalie Wiratunga, Sadiq Sani, Stewart Massie, and Jérémie Clos. Informed pair selection for self-paced metric learning in Siamese neural networks. 2018.

[10] Johann Benerradi, Horia Maior, Adrian Marinescu, Jérémie Clos, and Max Wilson. Exploring Machine Learning Approaches for Classifying Mental Workload using fNIRS Data from HCI Tasks. 2019.


## Technical reports


[TR1] Jérémie Clos. The architecture of the ENLIVEN Intelligent Decision Support System. Technical report, University of Nottingham, Nottingham, October 2019.

[TR2] Jérémie Clos and Claire Palmer. Data mining in the ENLIVEN project. Technical report, University of Nottingham, Nottingham, October 2019.

[TR3] John McCall, Olivier Regnier-Coudert, and Jérémie Clos. Predictive modelling of multivariate flow measurements for analysis of meter condition. Technical report, Robert Gordon University, Robert Gordon University, Aberdeen, December 2017.

[TR4] Jérémie Clos, André Péninou, and Florence Sèdes. Projet Cerise - Rapport de synthèse : Etat de l'art sur l'analyse d'impact et la traçabilité. IRIT, Université Paul Sabatier, Toulouse, June 2009.

[TR5] André Péninou, Florence Sèdes, and Jérémie Clos. Projet Cerise - Rapport de synthèse : Synthèse pour l'élaboration d'un référentiel d'ingénierie des interfaces entre systèmes. IRIT, Université Paul Sabatier, Toulouse, June 2009.