

## Teaching Activities – Marian-Andrei RIZOIU

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- **Breadth and quality of teaching.** I hold a pedagogical degree in higher education and I have a teaching experience of over 10 years. I have taught in four countries (Romania, France, Ukraine and Australia), and I have delivered more than 650 hours of lectures and tutoring for Undergraduates, Masters and Honours and I lectured in international excellence degree programs, such as the Masters Erasmus Mundus Excellence DMKM<sup>1</sup> and the Franco-Ukrainian Masters IDSM<sup>2</sup> (cooperation between the University Lumiere Lyon and the University of Kharkov, Ukraine).
- **Supervision completion.** More than 45 students: 4 PhD students, 2 RA/postdoc, 1 visiting postgrad students, 5 Honours (Masters by research) students, 4 summer scholar students, more than 30 coursework masters students (complete list here below.)
- **Student evaluation.** During my time at ANU, I consistently obtained higher than school average evaluations in the ANU's official Student Experience of Learning and Teaching.
- **Diverse teaching.** I taught a wide range of CS subjects (Programming, Calculus, Networking, Algorithms Design), of Machine Learning and Data Mining subjects (association rules mining, decision trees, clustering, symbolic learning, ensemble methods) and Social Media Analysis. This documents details the complete list of these courses.

### COURSES AND UNITS DEVELOPMENT

At Australian National University (2016-2019) convened the course of Document Analysis, which is aimed at third year Bachelors and Masters students. I reconstructed the Social Media Analysis section using elements of the innovative blended learning approach: starting from a real social network dataset, the students are guided through social network construction and analysis. Examples and todos follow each other in a natural order, all into a Jupyter Notebook. My efforts received an excellent student feedback in SELT – ANU's official student feedback. Here below are several such samples:

*"Marian was amazing and probably the best COMP lecturer I've had in ages,"*

*"Engaging and entertaining. Simplifies a lot of complex concepts with ease."*

*"Excellent lecturer skill, the lectures are well-paced and funny in general. Though have accents, but the speaking is at proper speed and is easily understandable."*

*"Bloke loves his social media, enthusiasm"*

### STUDENT SUPERVISION

2018 – 2019: **4 summer scholar program students: Zheyuan Liu, Haowen Li, Zongyang He, Shidi Li (Australian National University)** travel incidents duration prediction; traffic flow modelling and prediction.

2018: **2 Research Associate: Tianyu Wang and Rohit Ram (on research grants).**  
Transfer learning for HateSpeech detection; bot detection algorithms.

2018 – present: **Main supervisor of two PhD students: Quyu Kong and Rui Zhang (Australian National University & Data61)** Linking epidemic models and Hawkes processes; Non-parametric Bayesian estimation of Hawkes processes.

2018 – present: **2 Honours students(Shidi Li and Rohit Ram)** Developing the theory of interval-censored Hawkes processes; influence measures in social media.

2017  
June to Dec: **Visiting PhD Research student (Tongji University) – Shubing Shan**  
Popularity Linking professions (developer, librarian, CEO) to psychological traits inferred from text.

2016 – 2017: **Co-supervision of the PhD student Siqi Wu (Australian National University)**  
Popularity dynamics in a large collection of tweeted Youtube videos.

**4 Masters/Honours projects (Quyu Kong, Yifei Zhang, Rui Zhang, Shidi Li).**  
Quantifying user influence in social networks, EM for point processes, Detecting the reduction in online diversity.

2015 – present: **Co-supervision of the PhD student Swapnil Mishra (ANU & NICTA)**  
Prediction of popularity in Social Media.

<sup>1</sup> European Master of Excellence in Machine Learning and Knowledge Discovery. [Website](#).

<sup>2</sup> Master of Business Intelligence and Statistics for Management. [Website](#).

- 2014 – 2015: **3 Honours Research Project (Mingyuan Cui, Sina Eghbal, Zimin Wan)**  
Develop visualisation tool for big social graphs, analyze information diffusion in social networks and link to popularity evolution.
- 2012 – 2013: **Case Study (Masters European Erasmus Mundus DMKM)**  
Improve and optimise a topic extraction engine, from a corpus of texts of discussion forums.
- Research Initiation (Masters Computer Science)**  
Improving the visualisation of online social networks, extracted from discussion web forums.
- Academic Tutor for student professional internship**  
After 3 semesters of coursework, student did a one-month internships in industry (in banks, insurance companies or software development enterprises).
- 2011 – 2012: **Case Study (Masters European Erasmus Mundus DMKM)**  
Develop a visualisation tool for online social networks, extracted from discussion web forums.
- 2010 – 2011 : **Case Study (Masters European Erasmus Mundus DMKM)**  
Improve an article retrieving platform from online media journals, develop parsers, creation of a data warehouse and textual topic extraction.
- Research Initiation (Masters Computer Science)**  
Develop a temporal visualisation tool for textual topics, extracted from online discussion forums.
- Academic Tutor for student professional internship**  
After 3 semesters of coursework, student did a one-month internships in industry (in banks, insurance companies or software development enterprises)
- 2009 – 2010 : **Research Initiation (Masters Computer Science)**  
Develop an article retrieving platform from online media journals, develop parsers, creation of a data warehouse and textual topic extraction.

## TAUGHT SUBJECTS

Year	Sem	Course name (type and level) and brief description	vol
2020: Lecturer @UTS	Sem. 2	<b>Series of guest lectures CSS1 student mentoring, course code: 41078 (50 students, undergrad).</b> Detecting organised opinion manipulation, detecting bots and trolls.	8h
	Sem. 1	<b>Guest lecture Introduction to Data Analytics, course code: 31250 (50 students, undergrad).</b> Examples of analysis of real-world social media data.	2h
		<b>Invited Lecture Statistical Machine Learning (200 Honours and Masters students, ANU College of Engineering).</b> Applied data analytics and designing predictive experiments.	3h
2019: Lecturer @UTS	Sem. 2	<b>Invited Lecture Computational Propaganda (20 postgrad students, ANU National Security College).</b> Detecting organised opinion manipulation, detecting bots and trolls.	3h
	Sem. 1	<b>Invited Lecturer Research Methods Qualitative module (Honours and PhD students, ANU College of Engineering)</b> Apply quantitative, data science and machine learning for inferential problems.	3h
2018: Lecturer @ANU	Sem. 2	<b>Convener Document Analysis (3<sup>rd</sup> year Undergraduate and Honours)</b> Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	40h
	Sem. 1	<b>Research Methods Qualitative module (Honours and PhD students)</b> Apply quantitative, data science and machine learning for inferential problems.	20h
2017: Research Fellow @ANU	Sem. 2	<b>Convener Document Analysis (3<sup>rd</sup> year Undergraduate and Honours)</b> Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	40h

2016: Research Fellow @ANU	Sem. 2	<b>Convener Document Analysis (3<sup>rd</sup> year Undergraduate and Honours)</b> Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	40h
	Sem. 1	<b>Advanced Databases and Data Mining (3<sup>rd</sup> year Undergraduate)</b> Concepts of data warehousing and OLAP techniques, fundamental data mining algorithms.	30h
2015: adjunct @ANU	Sem. 2	<b>Document Analysis (3<sup>rd</sup> year Undergraduate and Honours)</b> Notions of classification and clustering, graph theory, visualization tools, centrality and community measures, sentiment analysis.	20h
2013 – 2014: Teaching assistant	Sem. 1	<b>Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)</b> Development of computer systems, complex systems.	15h
		<b>Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)</b> Association rules mining and ensemble methods.	3h
University Lyon 2		<b>Object Oriented Programming (Lecturing&amp;Tutoring Masters IDSM Kharkov)</b> Introduction in object-oriented programming, Java GUIs, APIs.	25h
	Sem. 2	<b>Data Mining (Tutoring Masters IDSM Kharkov)</b> Data analysis in R: processing and data cleaning, statistical analysis, data mining.	14h
2012 – 2013: Teaching assistant	Sem. 1	<b>Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)</b> Development of computer systems, complex systems.	15h
		<b>Object Oriented Programming (Lecturing&amp;Tutoring Masters Computer Science)</b> Introduction in object-oriented programming, Java GUIs, APIs.	25h
University Lyon 2		<b>Scientific Calculation (Tutoring undergraduates)</b> Programming in Octave, statistical and graphical calculations, time series analysis.	14h
		<b>Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)</b> Association rules mining and ensemble methods.	3h
	Sem. 2	<b>UNIX Operating Systems et C programming language (Lecturing&amp;Tutoring undergraduates IDS)</b> Usage and administration of UNIX systems, Bash programming, C language programming.	25h
		<b>Symbolic learning (Tutoring Master Erasmus Mundus DMKM)</b> Introduction to artificial intelligence, machine learning, Formal Concept Analysis, Decision Trees, Association Rules.	15h
		<b>Object Oriented Programming (Lecturing&amp;Tutoring Masters IDSM Kharkov)</b> Introduction in object-oriented programming, Java GUIs, APIs.	25h
	2011 – 2012: Teaching assistant	Sem. 1	<b>Numerical Calculus (Lecturing&amp;Tutoring undergraduates)</b> Personalised functions and VBA macros, Excel visual interfaces.
University Lyon 2		<b>Scientific Calculation (Tutoring undergraduates)</b> Programming in Octave, statistical and graphical calculations, time series analysis.	14h
		<b>Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM)</b> Association rules mining and ensemble methods.	3h
	Sem. 2	<b>Numerical Calculus (Lecturing&amp;Tutoring undergraduates)</b> Personalised functions and VBA macros, Excel visual interfaces.	42h
2010 – 2011: Teaching assistant	Sem. 1	<b>Initiation in programming in Visual Basic (Tutoring undergrads)</b> Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces.	21h
		<b>Object Oriented Programming (Tutoring Masters Computer Science)</b> Introduction in object-oriented programming, Java GUI, API	6h
University Lyon 2	Sem. 2	<b>Numerical Calculus (Lecturing&amp;Tutoring undergraduates)</b> Personalised functions and VBA macros, Excel visual interfaces.	11h
		<b>ACCESS Databases (Tutoring undergraduates IDEA)</b> Introduction to databases, tables, queries, reports.	28h

2009 – 2010:	Sem.	<b>Initiation in programming in Visual Basic (Tutoring undergrads)</b>	42h
Teaching assistant	1	Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces.	
University Lyon 2	Sem.	<b>Numerical Calculus (Lecturing&amp;Tutoring undergraduates)</b>	11h
	2	Personalised functions and VBA macros, Excel visual interfaces.	
		<b>ACCESS Databases (Tutoring undergraduates)</b>	14h
		Introduction to databases, tables, queries, reports.	
2008 – 2009 :	Sem.	<b>Communication Networks (Tutoring Engineering undergraduates)</b>	56h
TA	1	Notions of networking, communication protocols (TCP, IP, SSH), routing protocols (OSPF, RIP, IS-IS), local networks.	
Polytechnic Bucharest			
2007 – 2008 :	Sem.	<b>Constructing and implementing algorithms (Tutoring Engineering undergraduates)</b>	56h
TA	2	Initiation to the construction of algorithms, data structures, graph structures and algorithms, spatial and temporal complexity calculation.	
Polytechnic Bucharest			

**Total: 653h**

Other courses capable to teach: Operating System, Programming Languages (C/C++, Java, Python, C# etc.), Algorithms, Data Structures, Assembler, Databases, Object Oriented Programming, Parallel Programming, Operating Systems Programming, Web Programming, Data Mining / Machine Learning.