Teaching Activities – Marian-Andrei RIZOIU

Teaching and supervision overview

- **Teaching.** I hold a pedagogical degree in higher education and I have a teaching experience of 10 years. Overall, I have delivered more than 600 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[1] and the Franco-Ukrainian Masters IDSM[2] (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.)
- **Honours**. For the past four years, I obtained high evaluations in ANU's official Student Experience of Learning and Teaching (SELT) (see attached 2017 SELT evaluation of my 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.

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.

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).

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1   European Master of Excellence in Machine Learning and Knowledge Discovery. Website.
2   Master of Business Intelligence and Statistics for Management. Website.

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.

Teaching activity

Year	Sem	Course name (type and level) and brief description	*vol*
2018: Lecturer @ANU	Sem. 2	**Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	*40h*
2017: Research Fellow @ANU	Sem. 2	**Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	*40h*
2016: Research Fellow @ANU	Sem. 2	**Convener Document Analysis (3rd year Undergraduate and Honours)** Linear classifiers, clustering, graph theory, visualisation tools, centrality and community measures, sentiment analysis.	*40h*
	Sem. 1	**Advanced Databases and Data Mining (3rd year Undergratuate)** Concepts of data warehousing and OLAP techniques, fundamental data mining algorithms.	*30h*
2015: adjunct @ANU	Sem. 2	**Document Analysis (3rd year Undergraduate and Honnors)** Notions of classification and clustering, graph theory, visualization tools, centrality and community measures, sentiment analysis.	*20h*
2013 – 2014: Teaching assistant University Lyon 2	Sem. 1	**Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)** Development of computer systems, complex systems.	*15h*
		Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM) Association rules mining and ensemble methods.	*3h*
		Object Oriented Programming (Lecturing&Tutoring Masters IDSM Kharkov) Introduction in object-oriented programming, Java GUIs, APIs.	*25h*
	Sem. 2	**Data Mining (Tutoring Masters IDSM Kharkov)** Data analysis in R: processing and data cleaning, statistical analysis, data mining.	*14h*
2012 – 2013: Teaching assistant University Lyon 2	Sem. 1	**Software Methodologies (Tutoring Masters Erasmus Mundus DMKM)** Development of computer systems, complex systems.	*15h*
		Object Oriented Programming (Lecturing&Tutoring Masters Computer Science) Introduction in object-oriented programming, Java GUIs, APIs.	*25h*
		Scientific Calculation (Tutoring undergraduates) Programming in Octave, statistical and graphical calculations, time series analysis.	*14h*
		Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM) Association rules mining and ensemble methods.	*3h*

	Sem. 2	**UNIX Operating Systems et C programming language (Lecturing&Tutoring undergraduates IDS)** Usage and administration of UNIX systems, Bash programming, C language programming.	*25h*
		Symbolic learning (Tutoring Master Erasmus Mundus DMKM) Introduction to artificial intelligence, machine learning, Formal Concept Analysis, Decision Trees, Association Rules.	*15h*
		Object Oriented Programming (Lecturing&Tutoring Masters IDSM Kharkov) Introduction in object-oriented programming, Java GUIs, APIs.	*25h*
2011 – 2012: Teaching assistant University Lyon 2	Sem. 1	**Numerical Calculus (Lecturing&Tutoring undergraduates)** Personalised functions and VBA macros, Excel visual interfaces.	*21h*
		Scientific Calculation (Tutoring undergraduates) Programming in Octave, statistical and graphical calculations, time series analysis.	*14h*
		Numerical Machine Learning (Lecturing Master Erasmus Mundus DMKM) Association rules mining and ensemble methods.	*3h*
	Sem. 2	**Numerical Calculus (Lecturing&Tutoring undergraduates)** Personalised functions and VBA macros, Excel visual interfaces.	*42h*
2010 – 2011: Teaching assistant University Lyon 2	Sem. 1	**Initiation in programming in Visual Basic (Tutoring undergrads)** Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces.	*21h*
		Object Oriented Programming (Tutoring Masters Computer Science) Introduction in object-oriented programming, Java GUI, API	*6h*
	Sem. 2	**Numerical Calculus (Lecturing&Tutoring undergraduates)** Personalised functions and VBA macros, Excel visual interfaces.	*11h*
		ACCESS Databases (Tutoring undergraduates IDEA) Introduction to databases, tables, queries, reports.	*28h*
2009 – 2010: Teaching assistant University Lyon 2	Sem. 1	**Initiation in programming in Visual Basic (Tutoring undergrads)** Notions of programming in Visual Basic, sort algorithms, data structures, graphical interfaces.	*42h*
	Sem. 2	**Numerical Calculus (Lecturing&Tutoring undergraduates)** Personalised functions and VBA macros, Excel visual interfaces.	*11h*
		ACCESS Databases (Tutoring undergraduates) Introduction to databases, tables, queries, reports.	*14h*
2008 – 2009 : TA Polytechnic Bucharest	Sem. 1	**Communication Networks (Tutoring Engineering undergraduates)** Notions of networking, communication protocols (TCP, IP, SSH), routing protocols (OSPF, RIP, IS-IS), local networks.	*56h*
2007 – 2008 : TA Polytechnic Bucharest	Sem. 2	**Constructing and implementing algorithms (Tutoring Engineering undergraduates)** Initiation to the construction of algorithms, data structures, graph structures and algorithms, spatial and temporal complexity calculation.	*56h*
		Total:	*614h*

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.