

CURRICULUM VITAE: Damian A. Tamburri, Ir., Ph.D.

PERSONAL INFORMATION

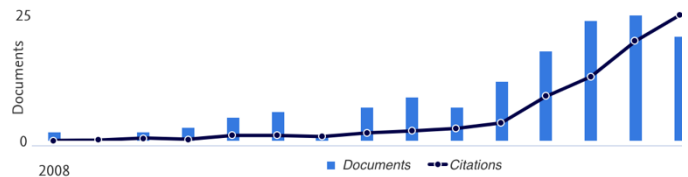
Name: Damian Andrew Tamburri
Date of birth: June 10th, 1983
Place of birth: Montreal, Canada
Citizenship: Canadian and Italian

CONTACT INFORMATION

Postal address: Jheronimus Academy of Data Science,
e-mail: Sint Janssingel 92, s'Hertogenbosch (NL)
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RESEARCH PROFILE

As of September 2023, according to DBLP (<https://dblp.uni-trier.de/pid/29/4648.html>) I have published 190 peer-reviewed articles, of which 58 in international journals (and I published 2 of them as single-author). My profile on GoogleScholar (<https://scholar.google.it/citations?hl=it,user=l7BGAq8AAAAJ>) shows an H-Index of 35, with a total of 4613 citations. However, I am not a big fan of the scientific numbers game [Parnas2007] and therefore would simply encourage the consideration of a more unbiased perspective using (1) citation trends and (2) interest from the community. First, from a trend analysis perspective, in the figure beside, I report the citation trend from my Scopus page (<https://www.scopus.com/authid/detail.uri?authorId=35488974800>) up to and including Y2023. The trend clearly highlights an upward super-linear curve, which indicates a great potential even though it has a long tail, connected to my head-start in research (I published my thesis at IEEE TSE before finishing my B.Sc. and two more papers while at ESA in 2008, well before I started my Ph.D. in Jan. 2011). Second, from an *interest from the community* perspective, I was recently notified that the article in “A Bibliometric Assessment of Software Engineering Scholars and Institutions (2013-2022)” to appear in 2024 in the Elsevier Journal of Systems and Software, did rank me as [quoting from the email notification]: “*top scholar in SE for the period 2013-2020, based on the well-known JSS bibliometrics paper on Top Institutes and Scholars!*” in the world. Due to the number of top software engineering (SE) journal papers I published in this period. This is of particular interest, considering that for two of those years (2014 and 2015) I was not even concentrating 100% on publications but mostly on EU project proposal-writing coordination and research activities at Politecnico di Milano, and in one (2016) of those years I was working on my start-up, DataSound.



Notably, as part of my Ph.D. work, I was the first one in the world in 2013 to start exploring the concept of social debt in software engineering [Tamburri2013b], which eventually inspired a large amount of work in the software engineering research community in the past five years. Besides being honorably mentioned in Prof. Dr. Tom Mens' keynote at ICSME 2016 for my pioneering work on community smells I was also invited as a Keynote speaker at ESEC/FSE 2015 (<http://esec-fse15.dei.polimi.it/ds-program.html>) to talk about the qualitative research I applied successfully until then, and later at SYNASC 2020 (<http://synasc.ro/2020/damian-tamburri/>) where I also addressed parts of the SODA project.

I pride myself to do research that can be used in practice, with usable and properly engineered tools. My main current tool is *CodeFace4Smells* (<https://github.com/maelstromdat/CodeFace4Smells>). A previous work on which I spent 7 years with several international collaborators from multiple disciplines, is *YOSHI* (<https://github.com/maelstromdat/YOSHI>). However, I do not specialize on social aspects only, and pride myself also in being curiosity-driven into state of the art and practice in more technical hard-core software engineering. For example, I conducted pioneering work on defect prediction for Infrastructure Code (accepted at IEEE TSE [DallaPalma2020] in 2021) and Cloud-Native Architectures (accepted at JSS in 2019 [Soldani2018]) which is receiving considerable attention (125 citations to date). Finally, I am not only a predicator of communities but also proud to constantly contribute to the software engineering community management, and be involved at the top-level by the software engineering community at large, both by IEEE TCSE and ACM SigSoft, with several involvements, e.g., Vice-Chair of the IEEE Technical Activities Committee (<https://www.computer.org/volunteering/boards-and-committees/technical-activities>) and editor for “Case-Studies” and “Data Science for Software Engineering” Standards [SigSoft2020].

CURRICULUM VITAE: Damian A. Tamburri, Ir., Ph.D.

EDUCATION

- March 19, 2014** **Ph.D. in Information Management and Software Engineering (Summa Cum Laude)**,
Department of Exact Sciences, VU University Amsterdam, The Netherlands.
Title of dissertation: Supporting Networked Software Development.
Supervisor: Prof. dr. Emr. Johannes Cornelis Van Vliet
- Sept. 12, 2010** **M.Sc. in Global Software Engineering (Summa Cum Laude)**,
Department of Exact Sciences, VU University Amsterdam, The Netherlands.
Title of master thesis: An Architecture Description Viewpoint Wiki Based on the Semantic Web
- Dec. 19, 2010** **M.Sc. in Analysis and Testing of Component-Based Systems (Summa Cum Laude, GSEEM Double-Degree Program)**,
Department of Engineering, Information Sciences, and Maths, University of L'Aquila, Italy.
Title of master thesis: An Architecture Description Viewpoint Wiki Based on the Semantic Web
- Mar 26, 2006** **B.Sc. in Computer Science**,
Department of Engineering, Information Sciences, and Maths, University of L'Aquila, Italy.

PROFESSIONAL EXPERIENCE & AFFILIATIONS

09/22 Associate Professor

Present Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico Di Milano, Milan, Italy.
(0.2 fte, fixed-term)

09/19 Associate Professor

Present Jheronimus Academy of Data Science, Department of Mathematics and Computer Science,
Eindhoven University of Technology, Eindhoven, The Netherlands.
(0.8 fte)

11/17-09/19 Assistant Professor

Jheronimus Academy of Data Science, Department of Mathematics and Computer Science, Eindhoven University of
Technology, Eindhoven, The Netherlands.
(1 fte)

20/14-12/17 Postdoctoral Research Fellow

Supervisors: Prof. dr. ir. Elisabetta Di Nitto
Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico Di Milano, Milan, Italy.
(1 fte, fixed-term)

15/11-19/14 Ph.D. Researcher

Department of Exact Sciences, VU University Amsterdam, The Netherlands.
(1 fte, fixed-term)

04/06-08/08 Junior Research & Development Engineer

European Space Operations Control (ESOC) / TERMA GmbH, Darmstadt (DE).
(1 fte, fixed-term)

CURRICULUM VITAE: Damian A. Tamburri, Jr., Ph.D.

ACADEMIC HONOURS AND AWARDS

- August 2000: Awarded with Honors the Trinity College Certificate of Proficiency in English (Dublin) - Ireland.
- September 2002: Awarded a merit scholarship for my high-school studies.
- June 2004: obtained the Cambridge Proficiency in English (CPE - C2) Certificate.
- October 2007: I was selected as a reviewer for "ESA Service Oriented Standard" Proposal by TERMA GmbH.
- April 2014: I was selected among 368 candidates from VU University Amsterdam and invited to attend the prestigious ASML Masterclass (by invitation only) sponsored and cost-covered by ASML Corp. in Eindhoven (NL) for a three-day hard-core, hand-on, problem-solving workshop;
- March 2015: I was prized with the JSS Best Reviewer Award for 2014;
- February 2018: I was prized with the JSS Outstanding Reviewer Award for 2017;
- March 2018: I was prized with the Distinguished Paper Award from the International Conference on Software Architectures (ICSA - CORE Class A) for the paper "*Infrastructure Code for Data-Intensive Architectures: A Model-Driven Approach and its Evaluation*".
- Merit scholarship for Senior High-School. Studies from the Italian State Scholarships Foundation. (1.400 €)
- Erasmus Travelling Scholar Grant (1st place) for excellence in Ph.D. studies (2014). VU University Amsterdam, Department of Exact Sciences, The Netherlands. (3.500 €).

EU GRANTS

- October 2012: I was awarded a research grant from the Amsterdam Network Institute for 5K Eurs - I used the grant to hire an assistant and explore "Subversion and Hijacking of Software Engineering Projects" - ROLE: Project Coordinator;
- November 2013: I was awarded a research grant from the Amsterdam Network Institute for 12K Eurs with a multi-disciplinary project proposal about "Cognitive Distance as a Metric for Team Performance" - ROLE: Project Coordinator;
- October 2014: I participated and edited the EU H2020 ICT1 Proposal "DICE" which scored at the maximum in its category - the project is currently concluded with excellence and was worth over 4M Eur, managed by our PI at Imperial College London, Prof. Dr. Giuliano Casale - ROLE: Work-package Leader;
- July 2017: I participated and edited the FNRS joint proposal on "SECOHealth -Software Ecosystems Health" - the project is currently started and ongoing steadily and is worth over 500K Eur, arranged evenly across three main partners (UMons, UMontreal & ULaval) - ROLE: Researcher;
- January 2018: I participated and edited the EU H2020 ISFP Proposal "PROTECT" which scored at the maximum in its category - the project is currently ongoing and is worth over 2M Eur, managed by our PI at DITSS Inc., Dr. Peter Van De Crommert --- JADS Share = 103K EUR- ROLE: Work-package Leader;
- January 2018: I participated and edited the EU H2020 RIA Proposal "ANITA" which scored at the maximum in its category - the project is currently ongoing and is worth over 5M Eur, managed by our PI at ENGINEERING Inc., Dr. Ernesto La Mattina--- JADS Share = 361K EUR- ROLE: Task Leader;
- April 2018: I participated and edited the EU H2020 ICT15 Proposal "SODALITE" which scored at the maximum in its category - the project is currently ongoing and is worth over 5M Eur, managed by our PI at XLAB Inc., Dr. Daniel Vladusic --- JADS Share = 556K EUR- ROLE: Task Leader;
- April 2018: I participated and edited the EU H2020 ICT15 Proposal "RADON" which scored at the maximum in its category - the project is currently ongoing and is worth around 4M Eur, managed by our PI, my friend, and colleague at Imperial College London, Prof. Dr. Giuliano Casale --- JADS Share = 568K EUR- **ROLE: Research Coordinator**.
- January 2023: I participated and edited the EU HorizonEurope Proposal "ONCOSCREEN" which scored at the maximum in its category - the project is currently ongoing and is worth around 6M Eur --- JADS Share = 368K EUR.
- February 2023: I participated and edited the EU HorizonEurope Proposal "MARIT-D" which scored at the maximum in its category - the project is currently ongoing and is worth around 4M Eur --- JADS Share = 245K EUR.

INVITED TALKS

- April 2013 - Invited Seminar at Centre for Wiskunde en Informatica (CWI) on "Agile Service Networks for Software Development Communities", Universiteit van Amsterdam, Amsterdam, The Netherlands - Prof. Dr. Jurgen Vinju;
- Nov. 2013 - Invited Seminar on "Socio-Technical Networks Analysis for Framing Social Debt" at University of British Columbia, Vancouver, Canada - Prof. Dr. Philippe Kruchten and Prof. Dr. Gail Murphy;
- June 2014 - Invited Seminar on "From Technical- to Social-Debt in Software Engineering, Insights from Industry" at Politecnico di Milano, Italy - Prof. Dr. Luciano Baresi and Prof. Dr. Elisabetta Di Nitto;
- Nov. 2015 - Invited Seminar on "Social Networks Analysis for Software Development Communities" at University of Bari, Bari, Italy - Prof. Dr. Filippo Lanubile;
- Jan. 2015 - Invited Seminar on "Social vs. Technical Debt: Insights from Theory and Practice" at University of L'Aquila, Italy - Prof. Dr. Henry Muccini;
- Nov. 2015 - Invited Seminar on "Continuous Big Data Engineering" at Imperial College London, London, UK - Prof. Dr. Giuliano Casale;
- Mar. 2016 - Invited Seminar on "Turning the Page on Service Oriented Computing: Insights from a Quantitative Survey" at Imperial College London, London, UK - Prof. Dr. Giuliano Casale;
- May 2016 - Invited Seminar on "DevOps: or baking a cake without the kitchen" at Groningen University, Netherlands - Prof. Dr. Paris Avgeriu;
- Jul. 2016 - Invited Seminar on "Model-Driven Continuous Architecting of Data-Intensive Applications" in the context of the NEMO Summer School - Vienna;
- Nov. 2016 - Invited Seminar on "Round-Trip Engineering for Legacy Space Data Systems: An Experience Report" in the context of the Reverse Engineering Course at University of Milano Bicocca - Milan, Prof. Francesca Arcelli-Fontana;
- Dec. 2016 - Invited Webinar on "TOSCA-based Infrastructure-as-Code for Data-Intensive Applications with DICER", by the Gigaspaces Cloudify Technological group;
- April-May 2017 - Invited Stay at University of Molise on "Synergies over Social and Technical Smells in Software Engineering";
- May 2017 - Invited Lecture at University of Molise on "Modern Software Systems: From Cloud to DevOps with a touch of Infrastructure-as-Code" in the scope of the Advanced Software Engineering course;
- May 2017 - Invited Lecture at Technical University Cyprus on "Continuous Architecting of Data-Intensive Applications in the Cloud";
- June-July 2017 - Visiting Scholar at Université de Mons on "Measuring Social and Socio- Technical Debt in Software Ecosystems";

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- Jul. 2017 - Invited Seminar on “Model-Driven Continuous Architecting of Data-Intensive Applications” in the context of the NEMO Summer School - Vienna;
- October 2017 - Invited Lecture at Technical University Cyprus Winter School in the context of the DOSSER-Cloud EU H2020 Project on “Continuous Architecting of Data-Intensive Applications in the Cloud”.
- November 2019 – Invited Lecture at Kristiania University Oslo, on “Continuous Architecting and The Conway Conundrum”;
- March 2020 – Invited Lecture at University of Salerno, on “OASIS TOSCA: Explained”;
- Nov. 2020 – Invited Lecture at Politecnico di Milano, on “Sustainable MLOps: Trends and Challenges”;
- May 2022 – Invited Lecture at Politecnico di Milano, on “OASIS TOSCA: Explained”;
- December 2022 – Invited Lecture at University of Groningen, on “Sustainable MLOps: Trends and Challenges”;

PhD STUDENT SUPERVISION

Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Milan, Italy.

**10/2014-
Defended** ➤ Dr. Marco Scavuzzo
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. E. Di Nitto

**11/2014-
09/2015** ➤ Dr. Santo Lombardo
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. E. Di Nitto

**10/2015-
Defended** ➤ Dr. Luca Florio
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. E. Di Nitto

**11/2015-
Defended** ➤ Dr. Marco Migliarina
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. E. Di Nitto

**02/2015-
Defended** ➤ Dr. Michele Guerriero
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. E. Di Nitto

**01/2016-
Defended** ➤ Dr. Francesco Marconi
➤ Role: Daily Supervisor
➤ Promotor: Prof.dr. M. Rossi

**03/2019
Present** ➤ M.Sc. Daniel De Pascale
➤ Role: Co-Promotor

**06/2018
Defended** ➤ M.Sc. Bert-Jan Butijn
➤ Role: Co-Promotor

**01/2019
Defended** ➤ M.Sc. Stefano Dalla Palma
➤ Role: Co-Promotor

**09/2019
Present** ➤ M.Sc. Stefan Driessen
➤ Role: Co-Promotor

**09/2019
Present** ➤ M.Sc. Nemanja Borowits
➤ Role: Co-Promotor

TEACHING EXPERIENCE

Lecturer (Coordinating & developing course):

03/11-07/11 ➤ B.Sc. “Project Web-Systems” course at VU University Amsterdam - The Netherlands, 6 ECTS;

03/15-07/17 ➤ M.Sc. “Requirements Engineering” course at University of Insubria - Varese, Italy, 6 ECTS ;

03/17-07/17 ➤ M.Sc. “Foundations of Advanced Software Architectures and Styles” course at University of Molise - Isernia, Italy, 6 ECTS;

11/17-01/21 ➤ M.Sc. “Introduction to Machine Learning” course at TU/e - Jheronimus Academy of Data Science - The Netherlands, 6 ECTS;

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- 11/17-Today** ➤ PDEng. “Big Data Engineering” course at TU/e - Jheronimus Academy of Data Science - The Netherlands, 6 ECTS;
- 06/11-07/14** ➤ M.Sc. “Service-Oriented Design” course at VU University Amsterdam - The Netherlands, 6 ECTS;
- 03/15-07/17** ➤ M.Sc. “Distributed Software Development” course at Politecnico Di Milano - Milan, Italy, 6 ECTS;
- 03/15-07/17** ➤ M.Sc. “Advanced Software Engineering” course at Politecnico Di Milano - Milan, Italy, 6 ECTS;
- 01/23-Today** ➤ M.Sc. “Deep Learning” course at TU/e - Jheronimus Academy of Data Science - The Netherlands, 6 ECTS;

SELECTED PAPERS

1. M Mohammadi, D Di Nucci, DA Tamburri “Bayesian Meta-Analysis of Software Defect Prediction With Machine Learning” IEEE Transactions on Industrial Cyber-Physical Systems.
2. G Cascavilla, DA Tamburri, F Leotta, M Mecella, WJ Van Den Heuvel “Counter-terrorism in cyber-physical spaces: Best practices and technologies from the state of the art” Information and Software Technology, 107260.
3. DA Tamburri, VR van Mierlo, WJ van den Heuvel “Big Data for the Social Good: The Drought Early-Warning Experience Report” IEEE Transactions on Big Data.
4. S Dalla Palma, D Di Nucci, F Palomba, DA Tamburri “Within-project defect prediction of infrastructure-as-code using product and process metrics” IEEE Transactions on Software Engineering 48 (6), 2086-2104.
5. N Borovits, I Kumara, D Di Nucci, P Krishnan, SD Palma, F Palomba, DA Tamburri “FindICI: Using machine learning to detect linguistic inconsistencies between code and natural language descriptions in infrastructure-as-code” Empirical Software Engineering Journal 27 (7), 178.

More information can be found here: <https://scholar.google.it/citations?hl=it&user=I7BGAq8AAAAJ> and here: <https://dblp.uni-trier.de/pid/29/4648.html>

RESEARCH STATEMENT

Quoting from the JADS website, the research mission of JADS can be summarized as follows: *“JADS is the data science academy of TU/e and TiU offering Professional and MSc. Programs, acting as a Center of Data Knowledge with a Multi-disciplinary approach. Data explorers come together at JADS. We give you the tools to create true impact with data. JADS offers data science bachelor and master programs, EngD education, professional education and helps organizations shape their data driven future. At JADS, researchers and students work closely with the business community. In addition to education and research, JADS also offers space for innovative, data-driven entrepreneurship and public-private partnerships. JADS is a unique cooperation between the Province of North Brabant, the Municipality of ‘s-Hertogenbosch, Tilburg University and Eindhoven University of Technology”.*

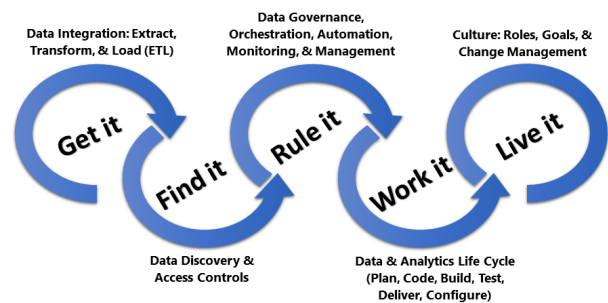
In my endeavor to find an angle that was most appealing to me, my scientific prowess, inclinations, and expertise I have decided to interpret the aforementioned mission along 3 core research discourses: (1) JADS evangelizes AI with a high-quality Data/MLOps perspective; (2) the target problems that JADS retains reflect high-impact grand challenges exerted by industry and society alike; (3) JADS promotes a blend of empirical and experimental research as a basis for high-relevance scientific inquiry.

At the stage of my promotion to associate professor (UHD1), I blended the three discourses above into the same professional researcher persona, becoming the first *“DataOps Systems Engineering”* professor at TUe. This persona reflects a scientist which derives his research focus from either industry- or society-relevant problems, applying a mixed-methods DataOps systems engineering research approach to achieve high-relevance and highly-impactful tangible results.

On the one hand, the DataOps systems engineering research area (see a recap of the core challenges in the field in the figure beside) is in its infancy and has barely scratched the surface of researching and providing validated methods, tools, and approaches to high quality, scalable DataOps pipelines. Grand challenges such as data fusion, data organisation/governance, data policy-making, data culture, are all widely open for further research.

On the other hand, I am currently in the phase in which---with a strong focus over MLOps in action---I need to gather consolidated baselines as well as a good perspective over societal and industrial problems touched upon by the subject matter, such that I am able (hypothetically within a 2/3 year timeframe) to propose a general framework to address high-quality DataOps at scale. My progress so far has seen considerable scientific results on several fronts amounting to over 100+ SCIMAGO Q1 and Q2 papers published in the last 4 years. Among these key results I report, for example, the following key breakthroughs: (1) I was able to put together a representative number of industrial and societal exercises of experimental DataOps/MLOps research which have yielded not only top publications but valuable baselines to be integrated in the future; (2) I have garnered a set of functionally-complete domain-specific challenges stemming from the key areas of exploitation for JADS (primarily, crime&safety as well as Industry 4.0); (3) I have gained a deep understanding over the methods and scientific approaches which best fit the target research. My major research challenges currently, reflect not only the harmonious integration of these results but also their validation at scale which remains perhaps the direst core challenge of my research. What is more, two major challenges which I have learned along the research lines I have followed so far, reflect the observability of data and AI in their context as well as their general sustainability. Altogether, these challenges I shall take head-on in the next increment of my research career for the upcoming 5+ years.

In this future timeframe, and with the intent of addressing the grand challenges above, I aim to continue the steady flow of grants I have been able to acquire in the past---e.g., I was able to acquire 2.5M€ in Y2023 alone---with a focus over grant calls that address (at least partially) at least 2 of the key challenges I highlighted above. In so doing, I plan to engage (as I have, so far) steadily in the past over the acquisition of HorizonEurope Research and Innovation Actions (RIAs) as well as national NWO grants. I shall strive to allocate such grant opportunities to both industry and society, keeping a 50%/50% allocation of my personal efforts, to bear a balanced investment in both areas. Finally, I am prepared to resubmit my personal grant discussing “the sustainability of AI solutions from an organisational perspective” to the upcoming ERC Consolidator Grant call.



DataOps = Data + Operations

Figure 1. DataOps Phases and Core Research Challenges.

TEACHING STATEMENT

From a teaching and educational perspective, while I am fully committed to the same line I have chosen for my research, therefore specifically focusing on use-inspired teaching endeavors, primarily Data Engineering and Deep Learning; I have a strong focus towards educating young researchers either in their first steps as research assistants and research discourse makers---e.g., as part of their master thesis work---or in the first steps of their research career, as part of their Ph.D. trajectory.

On the one hand, I am involved at M.Sc. level within the Data Engineering Master Course at JADS (which I designed myself), coordinating its current efforts and educating around 80+ students yearly on the discipline but at the same time, I exercise the same subject teaching it also at EngD level, again through a course of my own design, which I also update and align with industry concerns yearly; this is perfectly in line with my research focus on industry and industrial efforts.

On the other hand, beyond my regular advising of our unit's 8 Ph.D. students, I yearly advise around 30 young and talented Master Students; to address them into the realm of science I also regularly hold research basics seminars which allow the students to familiarize with the basis of scientific inquiry and with the first few steps around research design. Normally, the next step in this direction would be for me to hold regular meetings with said students advising them into a preliminary research plan and helping them bring value around their industry- and practice-inspired problems with a scientific and replicable approach.

Furthermore, at Ph.D. level, my teaching harnesses seminars around 4 topics: (a) basics of data, AI, and software engineering research; (b) empirical vs. experimental methods; (c) proposal-writing. I have held over the years around 4 seminars very semester to bring my ph.d. students up to speed with the most current approaches from the state-of-the-art. These series of seminars I was also invited to give at University of Milano Bicocca, University of Salerno, and University of L'Aquila, in Italy.

Overall, as a summary of the aforementioned efforts, my teaching activity for TUE/JADS is thus structured: (1) coordinating and delivering the "Deep Learning" M.Sc. course at JADS; (2) coordinating and delivering 2/6 modules of the "Data Engineering" M.Sc. course, aided by Prof. w.j.a.m. van den Heuvel and Dr. I. Kumara for the remaining modules; (c) coordinating and delivering the "Data Engineering" EngD course/module.

What is more, to increase the internationalization of the TUE way and the JADS joint institute, I have decided---jointly with my advisers at JADS---to engage in ancillary activities at Politecnico di Milano (Italy), the top University of Technology in Italy and a top educational institution in Europe and the world. The scope of this activity also entails my involvement in several seminars at PoliMi to evangelise TUE and JADS activities to PoliMi students as well as involving me in teaching activities to a much wider audience (150+ students) in the same institute. Although these teaching ancillary activities are limited in extent, their efficacy in increasing the presence, visibility and human capital attractiveness of JADS and TUE is so far quite considerable, having attracted 5 PoliMi master thesis students and two Ph.D. candidates at JADS in a single year.

In the future I aim to gradually blend my industrial contacts within my teaching more and more with a triple-helix intent: (a) allow the industrial and societal problems reflected by those contacts to gain visibility in my teaching; (b) increase the presence of industrial data within the same teaching; (c) procure industrials' benefit through intern acquisition at JADS and TUE.