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Gil Rocha

Curriculum Vitae

Personal Information

Date of birth	15/08/1993
Place of birth	Suresnes, Paris, France
Nationality	Portuguese
Gender	Male
Marital Status	Single

Education

2006–2011 **High School - Science and Technology course**
Escola Secundária de Paços de Ferreira, Portugal.

2011–2016 (B.Sc. and M.Sc.) **Integrated Master in Informatics and Computing Engineering (300 ECTS)**
Faculty of Engineering, University of Porto, Portugal

Master Thesis:
Title: *ArgMine: Argumentation Mining from Text*
Advisors: Prof. Henrique Lopes Cardoso and Jorge Teixeira

2015–2016 **Erasmus+ Programme, 1st semester 2015/2016**
Barcelona School of Informatics, Technical University of Catalunia and Faculty of Mathematics, University of Barcelona, Spain

I enrolled in five courses (total of 24.5 ECTS) of the Master in Artificial Intelligence and Master in Innovation and Research in Informatics, namely: Professional Practice in Artificial Intelligence, Introduction to Machine Learning, Normative and Dynamical Virtual Worlds, Optimization Techniques for Data Mining, Data Analysis and Knowledge Discovery.

2017–2021 (expected) **Doctoral Program in Informatics Engineering (ProDEI)**
Faculty of Engineering, University of Porto, Portugal
Title: Argumentation Mining from Text Using Semantic Approaches
Advisor: Prof. Henrique Lopes Cardoso

Work Experience

09/2014– 08/2015 **Web Development**
JCRSoft *Paços de Ferreira, Porto, Portugal*

JCRSoft is a software company responsible for the IT sector of some companies from different industrial sectors. I was responsible for the full development of the comercial websites for some of these companies, namely:

- NORTALU: `http://www.nortalu.com`
- CEMEPAFE: `http://www.cemepafe.pt`
- SERVIFLOR Group: `http://www.serviflorgroup.pt`

10/2016– Current **Research Assistant**
Artificial Intelligence and Computer Science Laboratory, LIACC/FEUP, Portugal

LIACC is a research unit hosted by University of Porto. LIACC's research goals are aligned with: - Coordination and interoperability of programs requiring distributed and decentralized solutions that cope with dynamic environments (both cooperative and competitive); - Intelligent methods for knowledge extraction; - Software reliability and declarativeness. The research unit is recognized as one the leading Portuguese research institutes on Artificial Intelligence. I have been working in the project entitled "ArgMine: Argumentation Mining from Text" which aims to develop a system able to automatic detect, identify and structure the argumentative content presented in natural language textual resources written in Portuguese.

04/2018– 05/2018 **Visiting Researcher**
Ubiquitous Knowledge Processing (UKP) Lab
Department of Computer Science, Technische Universität Darmstadt, Germany

Research visit partially supported by an Erasmus+ (Work) grant. During this period, I collaborated with the UKP lab on the topic of Argumentation Mining, under the supervision of Dr. Christian Stab. More specifically, we worked on a research project entitled "Cross-Lingual Argumentative Relations Identification". The aim of this project was to address the argumentation mining subtask of argumentative relation identification, focusing on cross-language learning techniques that can take advantage of growing corpora annotated with arguments that becomes available in different languages to improve the performance on this subtask for less-resourced languages.

Academic & Research Experience

Research Projects

11/2014–09/2015 **ArgMine: Argumentation Mining from Text**,
Artificial Intelligence and Computer Science Laboratory (LIACC/FEUP) & SAPO Labs, Porto, Portugal,
Research grant supported by SAPO Labs (FEUP).

This project aims to apply and enrich text mining techniques for the automatic detection and identification of the argumentative structure contained within a piece of natural language text.

Further information can be found at `http://labs.sapo.pt/portfolio/argmine/` and `https://web.fe.up.pt/~ei11124/argmine`

07/2017–Current **ARGH: Argumentation Hub**,
University of Porto Media Innovation Labs, Porto, Portugal,
Research Member.

The *Argumentation Hub* (ARGH) is a collaborative and interdisciplinary research initiative (involving the Faculty of Engineering, Arts and Law from the University of Porto) created to advance the state-of-the-art in argumentation and related applications. I am one of the founding members of the ARGH lab and currently a research member.

05/2018–10/2019 **IA.SAE: Artificial Intelligence in Economic and Food Safety**,
National Digital Skills Initiatives (INCoDe.2030),
LIACC/FEUP, Portuguese Economic and Food Safety Authority (ASAE),
Research Member.

This project aims to develop models for the semi-automated analysis of electronic complaints, risk analysis, selection of economic agents, and inspection route generation using recent Artificial Intelligence (AI) and Machine Learning (ML) techniques to explore the data provided by ASAE. Models for risk analysis and inspection prioritization to be developed will include the simulation of economic agent's behavior, techniques to aggregate and extract relevant information from several structured and unstructured knowledge bases, machine learning, optimization, data and text mining, interactive information visualization. My contributions to this project are mainly related to the NLP component, in which the goal is to develop models for semi-automated analysis of electronic complaints to filter (detect whether the complaint refers to an event that is within ASAE jurisdiction, or if it should be forward to a different judicial or governmental entity), organize (e.g. economic activity identification: classify the complaint amongst the eleven official economic activities that can be assigned to a complaint), and prioritize (infraction severity classification: prioritize investigating more serious and potentially harmful complaint targets) the huge amount of complaints received by ASAE. The main challenges of the project are related to the processing of user-generated content (complaints received by ASAE are mostly free form fields) for a less-resourced language (Portuguese).

10/2018–09/2021 **DARGMINTS: Discourse Analysis and Argumentation Mining from Text Sources**,
FCT POCI-01-0145-FEDER-031460,
LIACC/FEUP, FLUP, INESC-ID Lisboa,
Research Member.

This project proposes to study NLP/ML techniques for addressing the task of argument mining from text, focusing on the Portuguese language, considering different textual resources. The development of an NLP pipeline for the Portuguese language will be carried on, leveraging recent advances in the area. This NLP pipeline will support more advanced tasks, related to document-level parsing of discourse and to mining argument structures, to be aligned with argumentation schemes and discourse theories. We envision the development of new interactive visualizations for exploring argumentation patterns and processes. Such visualizations will be the basis for building appealing applications, that resort to historical data (news, parliamentary debate or on-line discussion archives), in areas related with media studies, political science or forensics (e.g. identifying opinion makers, detecting fallacies or radicalization processes), as well as applications specifically tailored for researchers in applied linguistics.

Teaching

03/2015–06/2015 **Supervisor of Artificial Intelligence undergraduate course**,
Faculty of Engineering, University of Porto, Portugal.

Artificial Intelligence course taught in the 3rd year of the Integrated Master in Informatics and Computing Engineering at FEUP. I was responsible for monitoring the laboratory work that students had to develop during the course.

09/2019–02/2020 **Invited Assistant Lecturer - Integrated Master in Informatics and Computing Engineering**,
Department of Informatics Engineering (DEI), Faculty of Engineering, University of Porto (FEUP), Portugal.

Invited Assistant Lecturer in the following course:

- Agents and Distributed Artificial Intelligence (AIAD): This course aims to teach techniques associated with agent-based computing, exploring, on one hand, agent-based complex systems modeling and simulation, and the development of intelligent agents and multi-agent system applications. The main goal is that students are able to specify and implement complex, adaptive, distributed and decentralized systems using the multi-agent systems paradigm. Course taught in the 4th year of the Integrated Master in Informatics and Computing Engineering at FEUP (equivalent to the Master's 1st year).

Scientific Events

Member of Programme Committees and Reviewer:.

- DSIE – Doctoral Symposium on Informatics Engineering, FEUP, Portugal: DSIE'17;
- ISMIS – International Symposium on Methodologies for Intelligent Systems: ISMIS'17;
- IEEE/WIC/ACM - International Conference on Web Intelligence: WI'17;
- IEEE S3C - International Summer School on Smart Cities: IEEE S3C'17;
- ENIAC - Encontro Nacional de Inteligência Artificial e Computacional: ENIAC'17;
- NAACL-HLT - North American Chapter of the Association for Computational Linguistics: NAACL'19.
- ACL - Annual Meeting of the Association for Computational Linguistics : ACL'19.
- Elsevier ESWA - Expert Systems with Applications (ESWA) International Journal.

Member of organization committees:.

- DSIE – Doctoral Symposium on Informatics Engineering, FEUP, Portugal: DSIE'17 (January 31, 2017);
- Workshop ArgHumantation – Research and Practice(s) of Argumentation, Argumentation Hub (ARGH), Media Innovation Labs (MIL), University of Porto (May 3, 2018);

Supervision of Students

MSc Students:.

- Li Yunyu, *Binary Classifier for Argumentation Schemes*, LIACC, February-July 2016 (co-supervised with Prof. Henrique Lopes Cardoso, Jorge Teixeira);
- José Ferreira, *Opinion-based Argumentation Mining*, MIEIC (FEUP), LIACC, October 2017 - July 2018 (co-supervised with Prof. Henrique Lopes Cardoso);
- André Cruz, *Tackling Portuguese Coreference Resolution Using Cross-Lingual Approaches*,"New Talents in Artificial Intelligence" grant supported by Calouste Gulbenkian Foundation, LIACC, October 2017 - August 2018 (co-supervised with Prof. Henrique Lopes Cardoso);
- Gonçalo Leão, *Evaluating Natural Language Argument Diagrams*, MIEIC (FEUP), LIACC, October 2018 - January 2019 (co-supervised with Prof. Henrique Lopes Cardoso);
- Catarina Correia, *Dynamic Detection of Ambiguities and Contradictions in Job Posting*, MIEIC (FEUP), LIACC, October 2018 - July 2019 (co-supervised with Prof. Henrique Lopes Cardoso and Dr. Joana Urbano);
- Luís Barbosa, *Intelligent Analysis of Complaints*, MIEIC (FEUP), LIACC, October 2018 - July 2019 (co-supervised with Prof. Henrique Lopes Cardoso);
- Cláudio Reis, *Anotação e Visualização de um Corpus para Argumentação* (Annotation and Visualization of an Argumentation Corpus), MCI (FEUP/FLUP), LIACC, October 2018 - July 2019 (co-supervised with Prof. Henrique Lopes Cardoso and Prof. Rui Sousa Silva);
- Daniela Sá, *Argument Diagramming: Annotation and Evaluation*, MIEIC (FEUP), LIACC, October 2018 - July 2019 (co-supervised with Prof. Henrique Lopes Cardoso and Prof. Rui Sousa Silva);
- Margarida Silva, *Extracting Knowledge of Scientific Events from Text*, "New Talents in Artificial Intelligence" grant supported by Calouste Gulbenkian Foundation, LIACC, October 2018 - August 2019 (co-supervised with Prof. Rosaldo Rossetti);
- André Cruz, *Bias Detection in Text*, "New Talents in Artificial Intelligence" grant supported by Calouste Gulbenkian Foundation, LIACC, October 2018 - August 2019 (co-supervised with Prof. Henrique Lopes Cardoso);
- Pedro Azevedo, *Fact Extraction and Verification*, MIEIC (FEUP), LIACC, October 2019 - July 2020 (co-supervised with Prof. Henrique Lopes Cardoso and Dr. Diego Esteves (Farfetch));

Invited Talks

10/2017 **Challenges in Natural Language Processing: From Semantic Tasks to Argumentation Mining.** *Faculty of Letters, University of Porto, Portugal*

Invited speaker at Jornadas de Análise do Discurso – JADIS VII / MEMITA (together with Prof. Henrique Lopes Cardoso)

10/2017 **ArgMine: Argumentation Mining from Text.**
Faculty of Engineering, University of Porto, Portugal

Invited speaker at the Language Processing and Information Extraction (PLEI) course from the Doctoral Program in Informatics Engineering (ProDEI) (together with Prof. Henrique Lopes Cardoso)

06/2018 **Argumentation Mining from Text.**
Smart Data Analytics (SDA), University of Bonn, Germany

Invited speaker in a seminar organized by the SDA research group at the University of Bonn. I introduced the topic of argumentation mining, presented some of the research work developed at LIACC, and some directions for possible collaborations between LIACC and SDA were discussed (e.g. DeFacto research project)

11/2017, 10/2018 **ArgMine: Argumentation Mining from Text.**
Faculty of Engineering, University of Porto, Portugal

Invited speaker at the Intelligent Systems, Interaction and Multimedia Seminar (SSIM) from the Integrated Master in Informatics and Computing Engineering (MIEIC) (together with Prof. Henrique Lopes Cardoso)

Publications

Conference Publications

1. Gil Rocha, Henrique Lopes Cardoso, and Jorge Teixeira. **ArgMine: A Framework for Argumentation Mining**. In *Computational Processing of the Portuguese Language - 12th International Conference*, PROPOR 2016, Student Research Workshop, Tomar, Portugal, July 13-15, 2016.
2. Gil Rocha and Henrique Lopes Cardoso. **Coreference Resolution in Portuguese: The Impact of Training Set Generation Approaches**. In *Doctoral Symposium in Informatics Engineering - 12th Edition*, DSIE 2017, Porto, Portugal, January 31, 2017. (nominated for Best Paper Award)
3. Gil Rocha and Henrique Lopes Cardoso. **Towards a Mention-pair Model for Coreference Resolution in Portuguese**. In *Oliveira, E., Gama, J., Vale, Z., Lopes Cardoso, H. (eds.) Progress in Artificial Intelligence - 18th EPIA Conference on Artificial Intelligence*, Springer, LNAI 10423, pages 855–867, Porto, Portugal. Springer. 2017.
4. Gil Rocha and Henrique Lopes Cardoso. **Recognizing Textual Entailment and Paraphrases in Portuguese**. In *Oliveira, E., Gama, J., Vale, Z., Lopes Cardoso, H. (eds.) Progress in Artificial Intelligence - 18th EPIA Conference on Artificial Intelligence*, Springer, LNAI 10423, pages 868–879, Porto, Portugal. Springer. 2017.
5. Gil Rocha. **Argumentation Mining from Text Using Semantic Approaches**. In *18th EPIA Conference on Artificial Intelligence - Doctoral Symposium on Artificial Intelligence*, SDIA 2017, Porto, Portugal, September 5-8, 2017.
6. Gil Rocha and Henrique Lopes Cardoso. **Towards a Relation-based Argument Extraction Model for Argumentation Mining**. In *Camelin, N., Estève, Y., Martín-Vide, C. (eds.) 5th International Conference on Statistical Language and Speech Processing*, SLSP 2017, pages 94-105, Le Mans, France. Springer. 2017.
7. André Ferreira Cruz, Gil Rocha, Henrique Lopes Cardoso. **Exploring Spanish Corpora for Portuguese Coreference Resolution**. In Proc. of the Fifth International Conference on Social Networks Analysis, Management and Security (SNAMS), Advances in Natural Language Processing, IEEE, Valencia, Spain, 2018.

8. Aniketh Janardhan Reddy, Gil Rocha, Diego Esteves. **DeFactoNLP: Fact Verification using Entity Recognition, TFIDF Vector Comparison and Decomposable Attention**. In Proc. of the 1st Workshop on Fact Extraction and Verification (FEVER 2018), collocated with EMNLP 2018, pages 132-137, Brussels, Belgium. ACL. 2018.
9. Gil Rocha, Christian Stab, Henrique Lopes Cardoso and Iryna Gurevych. **Cross-Lingual Argumentative Relation Identification: from English to Portuguese**. In Proc. of the 5th Workshop on Argumentation Mining (ArgMining 2018), collocated with EMNLP 2018, pages 144-154, Brussels, Belgium. ACL. 2018.
10. André Cruz, Gil Rocha, Rui Sousa-Silva and Henrique Lopes Cardoso. **Team Fernando-Pessa at SemEval-2019 Task 4: Back to Basics in Hyperpartisan News Detection**. In Proc. of the 13th International Workshop on Semantic Evaluation (SemEval-2019), NAACL, pages 999–1003, Minneapolis, Minnesota, USA. ACL. 2019.
11. Luís Barbosa, João Filgueiras, Gil Rocha, Henrique Lopes Cardoso, Luís Paulo Reis, João Pedro Machado, Ana Cristina Caldeira, Ana Maria Oliveira. **Automatic Identification of Economic Activities in Complaints**. In Proc. of the 7th International Conference on Statistical Language and Speech Processing, SLSP 2019, Ljubljana, Slovenia, October 14-16, 2019, Proceeding, Springer LNAI 11816.
12. Gil Rocha and Henrique Lopes Cardoso. **A Comparative Analysis of Unsupervised Language Adaptation Methods**. In Proc. of the 2nd Workshop on Deep Learning Approaches for Low-Resource NLP (DeepLo 2019), collacated with EMNLP-IJCNLP 2019, Hong Kong, November 3, 2019.
13. João Filgueiras, Luís Barbosa, Gil Rocha, Henrique Lopes Cardoso, Luís Paulo Reis, João Pedro Machado, Ana Maria Oliveira. **Complaint Analysis and Classification for Economic and Food Safety**. In Proc. of the Second Workshop on Economics and Natural Language Processing (ECONLP 2019), collacated with EMNLP-IJCNLP 2019, Hong Kong, November 4, 2019.
14. André Ferreira Cruz, Gil Rocha, Henrique Lopes Cardoso. **On Sentence Representations for Propaganda Detection: From Handcrafted Features to Word Embeddings**. In Proc. of the Second Workshop on Natural Language Processing for Internet Freedom: Censorship, Disinformation, and Propaganda (NLP4IF 2019), collocated with EMNLP-IJCNLP 2019, Hong Kong, November 4, 2019.

Journal Publications

1. Gil Rocha and Henrique Lopes Cardoso. **Recognizing Textual Entailment: Challenges in the Portuguese Language**. Information 2018, 9(4):76.

Thesis

1. **ArgMine: Argumentation Mining from Text**. Faculty of Engineering of the University of Porto. Master's Thesis, graded 18/20. Supervised by Prof. Henrique Lopes Cardoso (*LIACC/FEUP*) and Jorge Teixeira (*LIACC/FEUP* and *SAPO Labs/UP*)

Certifications

2012 **Portuguese Driving License (Category B)**,
IMTT, Portugal.

2012 **Basic Life Support Course**,
AEM Portugal.

2012 **BEST Local Engineering Competition (Team Design category)**,
BEST Porto, Faculty of Science of University of Porto, Portugal.

2013 **BEST Local Engineering Competition (Team Design category)**,
BEST Porto, Faculty of Science of University of Porto, Portugal.

2013 **ENEI 2013 - "Encontro Nacional de Estudantes de Informática"**,
Faculty of Engineering of University of Porto, Portugal.

2013 **Talk a Bit Conference**,
Faculty of Engineering of University of Porto, Portugal.

Talk a Bit is a conference organised by students, where invited speakers discuss some of the current hot topics in the area of computer science.

2015 **5th Lisbon Machine Learning School (LxMLS 2015)** ,
Instituto Superior Técnico, Lisboa, Portugal.

The school covers a range of machine learning (ML) topics, from theory to practice, that are important in solving natural language processing (NLP) problems that arise in the analysis and use of Web data.

2016 **9th Young Researchers Meeting of the University of Porto (IJUP 2016)** ,
Fundação da Juventude - Palácio das Artes, Porto, Portugal.

In this meeting, young researchers (bachelor and master degree students) of the University of Porto publicly present the research projects in which they were involved during the bachelor or master degree. I gave an oral presentation about the research project "ArgMine: Argumentation Mining from Text".

2016 **12th International Conference on the Computational Processing of the Portuguese Language (PROPOR 2016)**, Tomar, Portugal.

PROPOR is the main scientific meeting in the area of language and speech technologies for the Portuguese language and on the basic and applied research issues related to this language. The meeting brings together research groups in the area, promoting the development of methodologies, language resources, processing tools, applications and projects that may be shared among researchers and practitioners in the field.

2017 **29th European Summer School in Logic, Language and Information (ESSLLI 2017)**,
University of Toulouse, Toulouse, France.

ESSLLI brings together logicians, linguists, computer scientists, and philosophers to study logic, language, information and their interconnections. ESSLLI 2017 featured 44 courses at foundational, introductory, and advanced levels, as well as 4 workshops, 4 invited lectures, and a student session to foster interdisciplinary discussion. Courses and workshops are one week long and cover a wide variety of topics within the combined areas of interest: Language and Logic, Language and Computation, and Logic and Computation.

2019 **1st European NLP Summit (EurNLP 2019)**,
Facebook, London, UK.

EurNLP is an opportunity to foster discussion and collaboration between NLP researchers in academia and industry. The event included talks from research leaders on the latest advances in Natural Language Processing (NLP) and Machine Learning (ML) technologies. The goal of EurNLP Summit is to provide an informal focused get-together event to foster discussion and collaboration between researchers in and around Europe. I received a travel grant from *Facebook Research* to attend the event.

Honors and Awards

10/2019 **EurNLP 2019 Travel grant**,
EurNLP, Facebook London, London, UK.

EurNLP is an opportunity to foster discussion and collaboration between NLP researchers in academia and industry. The event included talks from research leaders on the latest advances in Natural Language Processing (NLP) and Machine Learning (ML) technologies. The goal of EurNLP Summit is to provide an informal focused get-together event to foster discussion and collaboration between researchers in and around Europe. I received a travel grant from *Facebook Research* to attend the event.

09/2018 **PhD Scholarship**,
Fundação para a Ciência e Tecnologia (FCT), SFRH/BD/140125/2018, Portugal.

PhD Scholarship supported by *FCT* (the national organization which evaluates and funds scientific research activities in Portugal) to support researchers, in all areas of knowledge, who wish to develop research work leading to a PhD degree. These scholarships are higly competitive (around 35% of acceptance rate). My application was ranked in the top 10% amongst more than 100 candidates in the field of Computer Science.

09/2018 **ProDEI PhD Scholarship**,
Doctoral Program in Informatics Engineering (ProDEI), Department of Informatics Engineering (DEI), Faculty of Engineering, University of Porto (FEUP), Portugal.

PhD Scholarship supported by *ProDEI*, the PhD program I enrolled to pursue my studies. This grant supports the 1st academic year of studies in the Doctoral program. Only 2 scholarships were available for the corresponding academic year.

07/2015 **5th Lisbon Machine Learning School (LxMLS 2015) - Travel grant**,
Instituto Superior Técnico, Lisboa, Portugal.

This summer school covers a range of machine learning (ML) topics, from theory to practice, that are important in solving natural language processing (NLP) problems that arise in the analysis and use of Web data. I received a travel grant provided by *Feedzai* to support my stay during the summer school.

03/2013 **EBEC Porto 2013 (Team Design category) - First Place**,
BEST Porto, University of Porto, Portugal.

EBEC - European BEST Engineering Competition. Local BEST Engineering Competition (LBEC) - is held within one University and organised by one Local BEST Group (LBG).

04/2013 **EBEC Portugal 2013 (Team Design category) - First Place**,
BEST Portugal, University of Aveiro, Portugal.

Teams that are winners of Local EBEC rounds in their universities are invited to the next stage. Regional/National BEST Engineering Competition (RBEC/NBEC) - is held within one region/country and organised by one of the LBGs from that region/country. This level has 15 Regional/National BEST Engineering Competition (RBEC/NBEC).

08/2013 **EBEC Final 2013 (Team Design category) - Second Place**,
BEST Warsaw, Warsaw University of Technology, Poland.

European BEST Engineering Competition Final event (EBEC Final) - involves students from more than 87 leading universities represented in BEST. EBEC Final event is organised every year after the second level of competitions as the peak gathering for the finalists that are confident in teamwork, creativity and innovative approach to problems in society or industry.

Skills

General: Computer Science, Mathematics, Software Engineering, Design and Analysis of Algorithms, Data Structures, Artificial Intelligence.

Programming languages: C++, C, Java, C#, XSLT, SQL, Prolog, MIPS, Assembly IA-32, Python, VDM++, AMPL

Web Development: JavaScript, HTML, CSS, PHP, Node.js, Bootstrap

Operative System	Linux, Windows, Android
Multi-Agent System	JADE, JADEX
Databases	MySQL, PostgreSQL, SQLite, MongoDB
Machine Learning Tools	scikit-learn, NumPy, SciPy, Pandas, CRFsuite, PyStruct, CRF++, TensorFlow, Keras, PyTorch
Others	Unity, RabbitMQ, Git, Eclipse, Microsoft Visual Studio, Intellij IDEA, Android Studio, UML, Software Design Patterns, Agile software development, CitiusTagger, NLTK, LaTeX

Languages

	Reading	*Writing*	*Conversation*
Portuguese	Native	Native	Native
English	Very good	Very good	Very good
French	Very good	Good	Good
Spanish	Good	Basic	Basic

Interests

Research Interests:

My current research interests are focused in the area of *Artificial Intelligence*, mainly in the following subjects: *Machine Learning*, *Natural Language Processing*, *Argumentation Mining*, *Computational Semantics*, *Transfer Learning* (currently, focusing on *Cross-Language Learning*), *Knowledge Representation and Reasoning*, and *Multi-Agent Systems*.

In General:

Science, Technology, Engineering, Computer Science, Software, Mathematics, Physics, Biology, Robotics, Artificial Intelligence, Electronics, Board games, Computer games, Sports, Music, Movies, TV Series, Documentaries, (scientific/adventure/mystery/science fiction) Reading, Logic puzzles.