

# Iana Atanassova

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## Current position

- Since 09/2014 **Assistant Professor**, *Université de Bourgogne Franche-Comté*, Besançon, France  
Centre de Recherches Interdisciplinaires et Transculturelles (CRIT)
- Since 09/2021 **Junior member**, *Institut Universitaire de France (IUF)*

## Research topics

My research is in the field of **Natural Language Processing (NLP)** and more specifically **full-text processing of scientific papers**. It is part of the research theme "Languages, Knowledge and Discourse" at the CRIT laboratory, with the development of linguistic approaches in NLP for the analysis of scientific discourse. I study the problems of **semantic annotation, ontology population, linguistic modelling and information extraction from scientific texts**. I have used NLP methods to process scientific corpora for building applications in bibliometrics and recommender systems. I have also participated in projects on text mining for competitive intelligence and personal data identification and representation.

My **recent research projects** focus on the study of the rhetorical structure of articles, and in particular the **expression of uncertainty** as part of the process of constructing scientific knowledge (e.g. the ANR InSciM project).

## Projects

### Principal Investigator (PI) and coordination

- 2022–2023 **Supervisor**, project on "Automatic correction of text responses to exams" with start-up e-Cole, funded by Technopole de la Réunion, with the objective of technology transfer to the start-up
- 2021–2025 **PI**, project InSciM - "Modelling Uncertainty in Science", funded by French ANR JCJC, ANR-21-CE38-0003-01 (270 340 euros)
- 2020–2024 **Supervisor**, project EMONTAL - "Extraction and Ontology Modeling of Subjects and Places for the Exploitation of the Documentary Funds of Bourgogne Franche-Comté", supervision of a PhD thesis, funded by Région Bourgogne Franche-Comté (<http://tesniere.univ-fcomte.fr/projet-emontal/>)
- 2019–2022 **PI**, project DecRIPT - "Detection of the Representations of Personal Data in Texts", funded by Interreg France-Switzerland 2014-2020 (307 313 euros) and Communauté du Savoir (9 409 euros) (<http://tesniere.univ-fcomte.fr/projet-decript/>)
- Academic partners: HEG (Switzerland), HEG Arc (Switzerland)
  - Private partners: ERDIL (France), Global Data Excellence (Switzerland)
  - Objectives: Building tools for the robust processing of personal data in texts to facilitate compliance with GDPR.

2016–2021 **Coordinator**, project “Researcher-entrepreneur” on “Linguistic analysis and automatic extraction of semantic relations in Arabic”, supervision of a PhD thesis and a post-doctoral fellow (Dr Youcef Morsi), funded by Université de Bourgogne Franche-Comté, with the objective of technology transfer to a start-up

### Participation

2020–2023 **Participant**, project *TheoScit*, funded by French ANR JCJC, PI Dr Marc Bertin, ANR-20-CE38-0003

2018–2024 **Participant**, project *SEO-ELP “Search Engine Optimization e-Learning Platform”*, funded by Université de Franche-Comté (<https://seo-elp.fr/>)

2016–2018 **Participant**, project *WebSO+: Competitive Intelligence Platform*, funded by Interreg France-Switzerland 2014-2020  
Development of a platform for strategic technological and competitive intelligence and e-reputation integrating semantic processing, text classification and sentiment analysis.

2015–2017 **Participant**, project *SARS - “System for assisted scientific writing in the biomedical domain”*, funded by Région Franche-Comté  
Tools for scientific writing using lexical databases and Information Retrieval.

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## Research supervision

### Post-doctoral supervision

01/2021–05/2021 **Dr Abdoulaye Guisse**, as part of *DecRIPT* project

09/2020–08/2021 **Dr Youcef Morsi**, *PostDoc resercher-entrepreneur*, with the objective to create of a start-up that exploits research results obtained during the PhD thesis

01/2020–12/2020 **Dr François-C. Rey**, as part of *DecRIPT* project

### PhD thesis supervision

2022– **Panggih Kusuma Ningrum**, “*Modelling the expression of uncertainty in scientific articles*”, Funded by project ANR InSciM

2020– **Nicolas Guterhlé**, “*Extraction and ontological modelling of actors and places for the exploitation of the documentary funds of the Bourgogne Franche-Comté Region*”, Project EMONTAL, funded by Bourgogne Franche-Comté Region

2019– **Salah Yahiaoui**, “*Information extraction of spatio-temporal data from scientific texts*”, Funded by French Ministry for Education and Research

2016–2020 **Youcef Morsi**, “*Linguistic Analysis and Automatic Information Extraction of Semantic Relations in Arabic*”, Funded by project researcher-entrepreneur

2016–2022 **François-C. Rey**, “*Ontology of uncertainty and semantic annotation of a corpus dealing with climate change*”, Co-directed with Dr Marc Bertin

### MSc thesis supervision

Non-exhaustive list.

2022 E. Boffetti

2021 J. Bacchiocchi, C.-T. Kuo, M.A. Nguyen Thi

2020 R. Hasnaoui, J. Bergoend

2019 S. Yahiaoui, A. Calatayud

- 2018 N. Guterhlé, C. El Cadi, I. Hatira, L. Annebi  
 2016 L. Lograda, F.-C. Rey, M. Delhotal, Y. Morsi

### Participation in PhD jurys

- 2021 **Pavel Savov**, "*Measuring the Novelty of Scientific Papers*", Polish-Japanese Academy of Information Technology, Poland  
 2019 **Miloud Rouabhi**, "*Analyse sémantico-cognitive de prépositions en vue d'un traitement automatique*", Sorbonne University, Paris, France  
 2018 **Drahomira Herrmannova**, "*Mining Scholarly Publications for Research Evaluation*", Knowledge Media institute, The Open University, United Kingdom  
 2017 **Dory Singh**, "*Extraction des relations de causalité dans les textes économiques par la méthode de l'exploration contextuelle*", Paris-Sorbonne (Paris 4) University, France

## Service

### Responsabilities

- Since 09/2022 co-director of the CRIT laboratory, Université de Franche-Comté, France.  
 Since 09/2021 referent for Open Science at CRIT laboratory, Université de Franche-Comté, France.  
 Since 09/2020 manager of the department of Natural Language Processing, Université de Franche-Comté, France.

### Course management

- Since 09/2017 course manager of the specialty "*Natural Language Processing (NLP)*" of Master of Science "Languages and Foreign Cultures (LLCER)", Université de Franche-Comté, France.

### ISO/AFNOR commission

- Since 06/2022 member of ISO/TC 37/SC 4 "Language resource management", WG 2 "Semantic annotation".  
 Since 09/2014 member of AFNOR commission, work group AFNOR/X03A, ISO/TC 37/SC 4 on Terminology and linguistic resource management (<https://norminfo.afnor.org/membre/atanassova-iana797933>).  
 o National referent for ISO 24617 "Semantic Annotation Framework".

### Organisation of workshops and scientific events

- 2017 Workshop "Mining Scientific Papers: Computational Linguistics and Bibliometrics (CLBib)", 16th International Conference on Scientometrics and Informetrics (ISSI), Wuhan, China, 2017 (<https://easychair.org/cfp/CLBib2017>).  
 2015 Workshop "Traitement Automatique des Langues Slaves (TASLA)", conference TALN 2015, France (<http://tesniere.univ-fcomte.fr/tasla/>).  
 2015 Workshop "Mining Scientific Papers: Computational Linguistics and Bibliometrics (CLBib)", 15th International Society of Scientometrics and Informetrics Conference (ISSI), Istanbul, Turkey, 2015.

- 2015 Workshop "Analyses logométriques des revues québécoises : traitements et visualisations", colloque "Relire les revues québécoises : histoires, formes et pratiques", Montreal, Canada, October 2015.

### Advisory boards

- Since 2019 member of the advisory board of the SIPS platform - "*Information System on Philosophy of Science*" (<https://sips.univ-fcomte.fr/>).
- Since 2018 member of the advisory board of the "*Natural Language Processing*" series, John Benjamins publishing (<https://benjamins.com/catalog/nlp>).
- Since 2016 elected member of the advisory board of the Doctoral School LECLA, Université de Bourgogne Franche-Comté (UBFC), France.

### Editorial work

- 2022 Editor of the Research Topic "*Mining Scientific Papers, Volume II: Knowledge Discovery and Data Exploitation*" in "*Frontiers in Research Metrics and Analytics*" (<https://www.frontiersin.org/research-topics/13388/mining-scientific-papers-volume-ii-knowledge-discovery-and-data-exploitation>). Editorial doi: 10.3389/frma.2022.911070
- 2019 Editor of the Research Topic "*Mining Scientific Papers: NLP-enhanced Bibliometrics*" in "*Frontiers in Research Metrics and Analytics*" (<https://www.frontiersin.org/research-topics/7043/mining-scientific-papers-nlp-enhanced-bibliometrics>). Editorial doi: 10.3389/frma.2022.911070.

### Reviews and programme committees

- Journals Reviewer for *Journal of Infometrics*, *Aslib Journal of Information Management*, *Journal of Natural Language Engineering*, *Computational Intelligence*, *Scientometrics*.
- Conferences Member of the programme committees of international workshops and conferences: Bibliometrics and Information Retrieval (BIR, since 2014); Workshop On Mining Scientific Publications (WOSP-2018), LREC 2018; Recent Advances in Natural Language Processing (RANLP-2017); The International Florida Artificial Intelligence Research Society Conference (FLAIRS, since 2014); The American Association for the Advancement of Science (AAAS) 2015 Annual Meeting; Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries (BIRNDL, since 2016); The International ACM Conference on Management of computational and collective intelligence in Digital EcoSystems (MEDES 2014 et 2015); Workshop on Scholarly Web Mining (SWM 2017); Computational Linguistics in Bulgaria (CLIB 2018, 2019); SPDP (2022).

### Associations and Societies

- ISSI Member since 2023.
- ATALA Member since 2014.

## Grants and prizes

- 2019–2021 Grant for doctoral supervision and research (PEDR), France, followed by IUF prize.
- 2017 First prize on the InovHackTion hackathon organised by the Air Force France on the Intelligent analysis of documents (<http://actu.univ-fcomte.fr/article/le-traitement-automatique-des-langues-seduit-larmee-005704>).

- 2016 Nomination for the annual International Society for Scientometrics and Infometrics (ISSI) Paper of the year award: Marc Bertin, Iana Atanassova, Vincent Larivière, and Yves Gingras. The Invariant Distribution of References in Scientific Papers. JASIST, 2016

## Science Dissemination

- 2017–2022 **TEDonnées**, *series of workshops for the general public "Emerging Data Processing Tools"*, Besançon, France  
The workshops aim to inform the general public and to promote the interactions between students in NLP, researchers and firms that work in this domain. Several editions were organised on the following topics:
- 2017, Data mining and e-reputation [tesniere.univ-fcomte.fr/tedonnees/tedonnees2017](http://tesniere.univ-fcomte.fr/tedonnees/tedonnees2017)
  - 2018, Smart cities and language technologies <http://tesniere.univ-fcomte.fr/tedonnees/tedonnees2018/>
  - 2022, Fake News and credibility of the public information <http://tesniere.univ-fcomte.fr/tedonnees/tedonnees2022/>
- 2017 **TDM Stories "The structure of papers"**, *OpenMinTeD Interview*, <http://openminded.eu/tdm-stories-structure-papers/>
- 2014 **Science map**, *"The Cognitive Context of Citations"*, in the *Places & Spaces 10th iteration: The Future of Science Mapping* exhibit, <https://scimaps.org/map/10/6>

## Teaching activity

Non-exhaustive list.

- Since 09/2014 **In MSc "Languages and Foreign Cultures" (LLCER), specialty Natural Language Processing**, *Université de Franche-Comté (UFC)*, Besançon, France  
Courses (lectures & tutorial classes): Methodology in NLP, Computer Programming for NLP, Information extraction and IR, Etymology, Cognitive Methods and ML, Software engineering for NLP.
- Since 09/2014 **In MSc "Languages and Foreign Cultures" (LLCER), all specialties**, *Université de Franche-Comté (UFC)*, Besançon, France  
Courses (lectures & tutorial classes): Collaborative work and project management, Information Retrieval
- Since 09/2014 **In BSc "Languages and Foreign Cultures", specialty Natural Language Processing**, *Université de Franche-Comté (UFC)*, Besançon, France  
Courses (lectures & tutorial classes): Computational Linguistics, Formal linguistics and informatics, Introduction to computer programming for NLP.
- 2019 & 2020 **In URFIST de Lyon**, France  
Courses: "Introduction to scientific writing with  $\text{\LaTeX}$ "
- 2011–2012 **In MSc "French Language and Applications"**, *Paris-Sorbonne University*, Paris, France  
Courses: "Introduction to Informatics and Natural Language Processing" (lectures & tutorial classes).
- 2009–2011 **In BSc "French Language and Informatics"**, *Paris-Sorbonne University*, Paris, France  
Courses: "Logics and Introduction to Informatics" (tutorial classes); "General Mathematics and Analysis - 1" (lectures & tutorial classes); "Preparation for the Certificate of Informatics and Internet (C2i) - level 1" (lectures & tutorial classes).
- 2009–2011 **In MSc "Informatics and Language Engineering for Information Management"**, *Paris-Sorbonne University*, Paris, France  
Courses: "Methodology and scientific reasoning" (tutorial classes).

2006–2009 **In MSc “Philosophy and Sociology”, Paris-Sorbonne University, Paris, France**  
Courses: “Informatic tools” (tutorial classes).

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## Work experience

- 02/2017 **International mobility Erasmus+ STA, University of Wolverhampton, Wolverhampton, UK, Research Institute in Information and Language Processing (RIILP), Research Group in Computational Linguistics**
- 01/2014–08/2014 **Post-doctoral fellow: Semantic processing of corpora in humanities and social sciences, Concordia University, Montreal, Canada**  
Research director: Pr. Jean-Philippe Warren  
Objectives: Linguistic analyses for the exploitation of the documentary collections of the Bibliothèque et Archives nationales du Québec (BAnQ); Identification of new concepts, semantic relations and definitions in journal articles; Diachronic analysis of corpora to produce data for the sociological study of ideas and the evolution of concepts.
- 03/2012–06/2013 **Research and Development manager, MyScienceWork, France/Luxembourg**  
Implementation of a search engine for scientific papers for the MyScienceWork social network.
- 09/2009–08/2011 **Teaching and Research Assistant, Paris-Sorbonne University, Institute of Applied Human Sciences, Paris, France**

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## Education

- December 2015 **Habilitation to Direct Research (HDR), specialty “Natural Language Processing”, University of Franche-Comté, Centre Tesnière, Besançon, France**  
Title: “Qualitative and quantitative analysis of scientific discourse. Applications to Information Extraction, Information Retrieval and the Semantic Web”  
Supervisor: Pr. Sylviane Cardey (University of Franche-Comté, France)  
Jury: Pr. R. Mitkov (University of Wolverhampton, UK); Pr. Ch. Roche (Université de Savoie, France); Pr. B. K. Bogacki (Université de Varsovie, Poland); Pr. L. Da Sylva (Université de Montréal, Canada); Pr. J.-P. Desclés (Paris-Sorbonne University, Paris); Pr. P. Pognan (INALCO, Paris).
- January 2012 **PhD in “Mathematics, Informatics and Applications to Human Sciences”, Paris-Sorbonne University, Faculty of Letters, LaLIC-STIH laboratory, Paris, France**  
Title: “Exploiting semantic annotations for information retrieval and text navigation”  
Supervisor: Pr. J.-P. Desclés (Paris-Sorbonne University, Paris)  
Jury: Pr. Th. Poibeau (CNRS, LaTTiCe); Pr. M. Hassoun (ENSSIB); Dr. Ch. Harbulot (EGE); Dr. B. Djioua (STIH, Paris-Sorbonne).
- 2005–2006 **MSc “Information and Communication”, Paris-Sorbonne University, Faculty of Letters, Paris, France**  
MSc thesis title: “Semantic annotations of texts in French and in Bulgarian with the Excom engine. Automatic syntheses.”
- 2004–2005 **MSc “Computational Linguistics”, Sofia University, Faculty of Classical and Modern Philology, Sofia, Bulgaria**
- 2002–2005 **BSc in English Studies, Sofia University, Faculty of Classical and Modern Philology, Sofia, Bulgaria**
- 2000–2004 **BSc in Mathematics, Sofia University, Faculty of Mathematics and Informatics, Sofia, Bulgaria**