

Maria Boritchev

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PROFESSIONAL EXPERIENCE

Assistant/associate professor

Oct. 2023 – Today

Télécom Paris

Palaiseau, France

- Teaching: Machine Learning, Natural Language Processing, Computational Linguistics.
- Research: semantic parsing of natural language, error analysis, applications in meta-research on ethics of AI.
- Collaborations with Tiphaine Viard, Mélanie Gornet, Simon Delarue.

Postdoctoral researcher

Jan. 2023 – Aug. 2023

Orange Labs

Lannion, France

- Semantic parsing of natural language, combining formal semantics and deep learning methods

Assistant professor / Postdoctoral researcher

Dec. 2021 – Dec. 2022

Mathematical Institute of the Polish Academy of Sciences

Warsaw, Poland

- Development and study of hybrid models for natural reasoning, combining formal logic with deep learning methods

Temporary Research Lecturer (ATER)

Sept. 2020 – Aug. 2021

Institute of Digital sciences, Management & Cognition, University of Lorraine

Nancy, France

- Full-time teaching position; students from first year of Bachelor's degree to last year of Master's
- Subjects: Algorithmics, Programming, Natural Language Processing, Logic, Formal Concept Analysis, Research Methodology, taught in French and English, see last column of Table 2 for details
- Continuing research work on Ph.D. subject in Sémagramme team, LORIA, Inria Nancy Grand-Est

Ph.D. Student

Sept. 2017 – Nov. 2021

LORIA, Inria Nancy Grand-Est

Nancy, France

- Supervisors: MAXIME AMBLARD and PHILIPPE DE GROOTE
- Elaboration of a logical, compositional and dynamic model of dialogue, in particular for articulation of questions and answers in oral dialogue
- Construction of a corpus (DinG – Dialogues in Games, in French) of real-life data composed of transcriptions of recordings of people playing the board game Catan
- Development and testing of several multilingual annotation schemes for questions and answers in dialogue, first developed on English, then tested on corpora in French, Italian, Spanish, Dutch, and Mandarin Chinese
- Teaching and creation of material for lectures and exercise sessions, see Table 2 for details

Research intern

Feb. 2017 – June 2017

LORIA, Inria Nancy Grand-Est

Nancy, France

- Supervisor: MAXIME AMBLARD
- Elaboration of a dynamic model of dialogue in a narrowed down theoretical framework
- Tested on data from SLAM – Schizophrenia and Language, Analysis and Modelling corpus (in French)

Research intern

June 2016 – Aug. 2016

Center for Argumentation Technology, University of Dundee

Dundee, Scotland

- Supervisor: CHRIS REED
- Automatic extraction of intertextual correspondences of social media (Reddit) users' reactions to political argumentation (2016's US Primaries debates)

Research intern

June 2015 – July 2015

Research Institute in Computer Science of Toulouse

Toulouse, France

- Supervisor: PATRICK ST. DIZIER
- Opinion and argumentation analysis of categories of consumers, using data from Internet Movie Database (IMDb)
- Development of an English version of TextCoop (discourse analysis tool)

Students	Course title	Language	23-24
M2 Télécom & X	<i>DS-Telecom-20: NLP</i>	English	3h30 course + 6h tutorial
1 st year MS Télécom	<i>IA717: NLP</i>	French	3h course + 8h project
1 st year MS Télécom	<i>BGD709 : Web data</i>	French	3h course + 6h tutorial
1 st year MS Télécom	<i>Red thread project</i>	French	
3 rd year Engineering	<i>IA312: NLP</i>	English	3h course + 3h tutorial
1 st year Engineering	<i>Artishow Project</i>	French	
2 nd year Engineering	<i>SD-TSIA214: ML for Text Mining</i>	English	3h course + 6h tutorial
M2 IPP DATA & AI	<i>Softskills seminar</i>	English	0h30 tutorial
2 nd year Engineering	<i>SI221-B: Fundamentals of machine learning algorithmic approach</i>	French	3h course + 6h tutorial
			Total: 18h30 course + 27h30 tutorial

Table 1: NLP = Natural Language Processing, ML = Machine Learning, DS = Data Science, M2 = Master 2, M1 = Master 1, MS = Mastère spécialisé, X = École Polytechnique.

Students	Course title	Language	17-18	18-19	19-20	20-21
M2 NLP and CS	<i>Research Methodology</i>	English			5h course + 5h tutorial	5h course + 5h tutorial
M1 and M2 NLP	<i>Matrix calculus refreshing course</i>	English		4h course + tutorial		
M1 CS	<i>Innovation and Technology</i>	English	15h tutorial			
M1 NLP	<i>Web Semantics</i>	English (+ Russian)		15h tutorial		
M1 NLP	<i>Methods for NLP</i>	English				4h tutorial
M1 NLP	<i>Calculability and Complexity</i>	English				10h tutorial
L3 CS	<i>Linguistic engineering</i>	French				10h tutorial
L3 CS	<i>Formalisms and Representations of Reasonings</i>	French	10h course + 10h tutorial	10h course + 10h tutorial	10h course + 10h tutorial	10h course + 10h tutorial
L2 MIASHS	<i>Advanced Algorithmics</i>	French				36h tutorial
L2 CS	<i>Natural Language Processing</i>	French				10h tutorial
L1 MIASHS	<i>Algorithmics and Programming 1</i>	French		20h tutorial		22h tutorial
L1 MIASHS	<i>Algorithmics and Programming 2</i>	French				15h tutorial
L1 MIASHS	<i>Algorithmics and Programming 3</i>	French		26h tutorial		26h tutorial
L1 Humanities	<i>Digital Tools & Culture</i>	French				20h tutorial

Table 2: NLP = Natural Language Processing, CS = Cognitive Science, MIASHS = Mathematics and Computer Science applied to Humanities, M2 = Master 2, M1 = Master 1, L3 = 3rd year of Bachelor degree, L2 = 3rd year of Bachelor degree, L1 = 1st year of Bachelor degree.

EDUCATION

Computer Science Ph.D.

Defended November 22, 2021

University of Lorraine, Nancy, France

Sep. 2017 – Nov. 2021

- * **Title:** *Dialogue Modeling in a Dynamic Framework*
- * **Supervisors:** MAXIME AMBLARD and PHILIPPE DE GROOTE
- * **Reviewers:** FARAH BENAMARA ZITOUNE (IRIT, Université Paul Sabatier, Toulouse, France) and JONATHAN GINZBURG (Université Paris Diderot – Paris 7, France)
- * **Examinators:** ELLEN BREITHOLTZ (Université de Göteborg, Suède), IRIS ESHKOL-TARAVELLA, (Université Paris Nanterre, France)
- * **President of the jury:** MIGUEL COUCEIRO (Université de Lorraine, France)

Master 2

Applied Cognitive Sciences, Natural Language Processing major

University of Lorraine, Nancy, France

Sep. 2016 – Aug. 2017

Master 1

Theoretical Computer Science

École Normale Supérieure of Lyon, France

Sep. 2015 – Aug 2016

COMMUNITY INVOLVEMENT

Reviewer for Language Resources and Evaluation journal	2024
Reviewer for the SemDial (TrentoLogue 2024) conference	2024
Co-organiser of the department's scientific animation, IDS, Télécom Paris	2023-
Reviewer for TAFFC journal, Volume 14	2023
Reviewer for the SemDial (MariLogue 2023) conference	2023
Reviewer for Corpus (Jan. 2024) journal	2023
Reviewer for the IWCS 2023 conference	2023
Member of the program committee of Coling conference	2022
Member of the program committee of SemDial conference (DubDial 2022)	2022
Member of the program committee of RECITAL conference	2020
Organiser of the team's weekly seminar, Sémagramme, Loria	2017-2019

PUBLICATIONS

Mapping AI ethics: a meso-scale analysis of its charters and manifestos, Mélanie Gornet, Simon Delarue, Maria Boritchev, Tiphaine Viard, ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT), June 2024, Rio de Janeiro, Brazil.

A formal and computational semantics approach to identifying underexplored topics: the case of artificial intelligence ethics charters and manifestos, Maria Boritchev, Tiphaine Viard, Proceedings of the first Undone Computer Science conference (UndoneCS), Feb. 2024, Nantes, France.

Towards dynamic inquisitive semantics of dialogue, Maria Boritchev, Theoretical Linguistics Vol. 49, Issue 1-2, June 2023.

Error Exploration for Automatic Abstract Meaning Representation Parsing, Maria Boritchev, Johannes Heinecke, Proceedings of the 15th International Conference on Computational Semantics (IWCS 2023), June 2023, Nancy, France.

Compositionality in a simple corpus, Manuel Vargas Guzmán, Maria Boritchev, Jakub Szymanik, Maciej Malicki, Journées Jointes des Groupements de Recherche « Linguistique Informatique, Formelle et de Terrain » et « Traitement Automatique des Langues », Nov. 2022, Marseille, France.

A Multi-Party Dialogue Ressource in French, Maria Boritchev, Maxime Amblard, Proceedings of the Thirteenth International Conference on Language Resources and Evaluation (LREC 2022), June 2022, Marseille, France.

An inquisitive account of wh-questions through event semantics, Maxime Amblard, Maria Boritchev, Philippe de Groote, LACL 2021: Logical Aspects of Computational Linguistics, Dec. 2021, online, France.

Picturing Questions and Answers – a formal approach to SLAM, Maria Boritchev, Maxime Amblard, (In)coherence of discourse – Formal and Conceptual issues of Language, Springer, Language, Cognition and Mind, pp 65-89, 2021.

On dialogue modeling: a dynamic epistemic inquisitive approach, Maria Boritchev, Philippe de Groote, New Frontiers in Artificial Intelligence, Springer International Publishing, pp 21-36, 2021.

There is as yet Insufficient Data for a Meaningful Answer, Maria Boritchev, Maxime Amblard, SemDial 2020 – WatchDial – 24th Workshop on the semantics and pragmatics of dialogue, July 2020, Brandeis, United States.

A Taxonomy of Real-Life Questions and Answers in Dialogue, Maxime Amblard, Maria Boritchev, Marta Carletti, Lea Dieudonat, Yiting Tsai, SemDial 2019 – LondonLogue – 23rd Workshop on the semantics and pragmatics of dialogue, September 2019, London, United Kingdom.

Toward Dialogue Modeling: A Semantic Annotation Scheme for Questions and Answers, Maria-Andrea Cruz-Blandón, Gosse Minnema, Aria Nourbakhsh, Maria Boritchev, Maxime Amblard, LAW XIII 2019 – The 13th Linguistic Annotation Workshop, August 2019, Florence, Italy.

A compositional view of questions, Maria Boritchev, Maxime Amblard, WiNLP – Widening NLP – ACL Workshop, July 2019, Florence, Italy.

Coffee or tea? Yes, Maria Boritchev, Maxime Amblard, The 22nd workshop on the Semantics and Pragmatics of Dialogue, Laurent Prévot, Magalie Ochs and Benoît Favre, November 2018, Aix-en-Provence, France.

PRESENTATIONS

Semantics, reasoning & representation, LTCI research days, Nov. 2023, Télécom Paris, France.

Logic, compositionality, and semantics for natural language modeling, LIRICA's team seminar, April 2023, Marseille, France, online.

Exploring compositionality and semantics towards hybrid approaches to natural language modeling, LISN, March 2023, Paris Saclay, France.

Compositionality and semantics for natural language modeling, S2A team's seminar, Télécom Paris, March 2023, Paris, France, online.

Dialogue modeling & reasoning, EXPRESSION team's seminar, IRISA, Jan. 2023, Brittony, France, online.

Compositionality and logic in language, séminaire Jeunes Talents TALEP (JTT), Jan. 2023, Marseille, France.

DinG – dialogue, jeu, et questions, DELICORTAL seminar, Dec. 2022, Grenoble, France, online.

Compositionality, languages, and neural networks, séminaire Café TAL, Nov. 2022, Nancy, France, online.

Hybrid models of natural reasoning, co-presented with Manuel Vargas Guzmán, Reasoning & natural language processing seminar, June 2022, Warsaw, Poland.

Hybrid models of natural reasoning, co-presented with Manuel Vargas Guzmán, Workshop on reasoning & neural models, May 2022, Amsterdam, Netherlands.

Modeling Dialogue through the Question-Answer relationship, CLASP seminar, March 2022, Gothenburg, Sweden, online.

An inquisitive account of wh-questions through event semantics, LACL 2021: Logical Aspects of Computational Linguistics, Dec. 2021, online.

Dialogues in Games – DinG, GdR LIFT Days, December 2021, Grenoble, France.

There is as yet Insufficient Data for a Meaningful Answer – Linking questions and answers, 24th Workshop on the semantics and pragmatics of dialogue, July 2020, online.

Semantic processing of (real-life) questions and answers, Workshop on Formal Approaches to (In)coherence and Dynamics in Dialogue, Oct. 2019, Gothenburg, Sweden.

Thé, café et licornes — Traitement de la structure conversationnelle dans la théorie dynamique des types, EJCIM 2019 – School for Young Researchers in Computer Science Mathematics, March 2019, Marseille, France.

On Politics and Argumentation, MALOTEC Seminar, March 2017, Nancy, France.

Grande L3 deviendra mini-chercheuse, SIESTE Seminar, Feb. 2017, Lyon, France.

AWARDS AND FUNDING

Fall day of doctoral school IAEM Lorraine Dec 2019
Best poster award

Mobility program for research, French Institute of Sweden Oct 2019
GALAN program participant

SUPERVISING EXPERIENCE

HNApp - Machine learning with Digital Humanities Jan. 2024 – June 2024

- *Artishow Project*, 1st year Engineering students
- Students: Etienne Pelissier, Jean-Claude Moissinac, Yacine Khalil, Daniel Berda, co-supervisor: JEAN-CLAUDE MOISSINAC
- Design of a web platform to visualize and explore cultural data and its links to textbooks.

Adapting Language Models to the Renault Domain Jan. 2024 – June 2024

- *Red thread project*, 1st year MS Télécom
- Students: Byong Hee Lee, Ahmed Belaaaj, Maxime Ledieu, Leo Barberis, co-supervisors: MATTHIEU LABEAU, FRANCOIS-PAUL SERVANT (Renault)
- Exploration of possible data science approaches and techniques for adapting general language models to the automobile domain and Renault entities in particular, based on an existing model.

What are you saying? | Supervised project, Master 1 Oct. 2020 – Aug. 2021

- Students: Anar Yeginbergenova and Albert Millert, co-supervisors: Maxime Amblard, Chuyuan Li
- Development of a dialogue parser for clinical data

Dialogues in Game - DinG | *Internship, 3rd year of Bachelor's degree* May 2020 – Aug. 2020

- Student: Lucille Dumont, co-supervisors: Maxime Amblard
- Study of incomprehension phenomena in dialogue through question and answer articulations

Does my question answer your answer? | *Supervised project, Master 1* Oct. 2019 – June 2020

- Students: Axel Didier and Alena Yakavets, co-supervisors: Maxime Amblard
- Automating the annotation of dialogue acts (cut short by the Covid-19 pandemic)

DinG – Transcription guide elaboration | *Internship, Master 1* June 2019 – Aug. 2019

- Student: Esteban Marquer, co-supervisor: Maxime Amblard

Tea or coffee? | *Supervised project, Master 1* Oct. 2018 – June 2019

- Students: Léa Dieudonnat, Marta Carletti, Yiting Tsai, co-supervisors: Maxime Amblard, Michel Musiol
- Crosslingual study of the question-answer relationship in dialogue

What's The Answer: Dialogue Annotation | *Supervised project, Master 1* Feb. 2018 – June 2018

- Students: Maria Andrea Cruz Blandon, Gosse Minnema, Aria Nourbakhsh, co-supervisor: Maxime Amblard
- Creation of a crosslingual annotation schema for questions and answers in dialogue, automation experiments

SCIENTIFIC MEDIATION

“ASK A SCIENTIST” online, August 2022 - August 2023

Weekly online sessions organised by the association EARTHLINGS HUB with children displaced during the war in Ukraine. Answering scientific questions from the children, about computer science, artificial intelligence, and linguistics, in Russian and Ukrainian.

Computer Science & Linguistics Paris, France, February 2022

Presentation of computational linguistics as a research field through my research topics, for students of first year of Bachelor's degree in Language Sciences of University of Paris, during a course given by Alice Cesbron.

CogTalk #2: Doing one's thesis in Loria Nancy, France, February 2019

Presentation of the Ph.D subject and “How to apply for a Ph.D.?” , for students of University of Lorraine (from first year of Bachelor's degree to end of Master's).

Saturday for the Curious, Enquête 2018 Drancy, France, March 2018

Discovery afternoon for kids from 6 to 10 years old and their parents, about logic and cryptography.

ApéroDOC #1 Nancy, France, February 2018

Informal presentation of my Ph.D. subject to Ph.D. students of University of Lorraine.

TECHNICAL & LANGUAGE SKILLS

Proficient: Python

Intermediate: OCaml, C, HTML, CSS, Prolog

Notions: bash, Bootstrap, Coq, Java, Perl, SQL, Lex&Yacc

Tools: Git, L^AT_EX, Beamer, Anaconda, VS Code

Bilingual: French, Russian

Fluent: English

Beginner: German, Polish, Ukrainian