

Àlex R. Atrio

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Research Interests

Natural Language Processing, Machine Translation, Language Generation, Machine Learning, Deep Learning

Education

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| 2019–... | Ph.D. Electrical Engineering Doctoral Program (EDEE).
<i>Exams: 4.75/6</i>
École Polytechnique Fédérale de Lausanne (EPFL), & Haute École d'Ingénierie et de Gestion de Vaud (HEIG-VD), Switzerland.
- <i>Thesis</i> : Constrained Training and Inference of Neural Models for Low-Resource Machine Translation and Text Generation.
- <i>Thesis supervisors</i> : Andrei Popescu-Belis & Jean-Marc Odobez. |
| 2017–2018 | Master in Cognitive Science and Language (CCiL) , <i>GPA: 8.2/10</i>
University Pompeu Fabra (UPF) & University of Barcelona (UB).
- <i>Thesis</i> : Machine Translation Inspired Word Reordering as Pre-processing for Cross-Lingual Sentiment Analysis.
- <i>Advisors</i> : Toni Badia & Jeremy Barnes. |
| 2011–2016 | Bachelor in Philosophy with Specialization in Logic, Philosophy of Language and Philosophy of Science , <i>GPA: 7.6/10</i>
University of Barcelona (UB). |

Publications

Papers in Conference Proceedings

1. Popescu-Belis A., **Atrio À.R.**, Minder V. Xanthos A., Luthier G., Mattei S., & Rodriguez A. (2022). Constrained Language Models for Interactive Poem Generation. To appear in the 13th International Conference on Language Resources and Evaluation (LREC), 10 p.
2. **Atrio À.R.** & Popescu-Belis A. (2022). On the Interaction of Regularization Factors in Low-resource Neural Machine Translation. Proceedings of the 23rd Annual Conference of the European Association for Machine Translation (EAMT), p. 111-121. <https://aclanthology.org/2022.eamt-1.14>

3. **Atrio À.R.**, Luthier G., Fahy A., Vernikos G., Popescu-Belis A., & Dolamic L. (2021). The IICT-Yverdon System for the WMT 2021 Unsupervised MT and Very Low Resource Supervised MT Task. Proceedings of the 6th Conference on Machine Translation (WMT), Online and Punta Cana, Dominican Republic, p. 978-986. <https://aclanthology.org/2021.wmt-1.103>.
4. **Atrio À.R.** & Popescu-Belis A. (2021). Small Batch Sizes Improve Training of Low-Resource Neural MT. Proceedings of the 18th International Conference on Natural Language Processing (ICON), Online and Silchar, India, p. 18-21. <https://doi.org/10.48550/arXiv.2203.10579>
5. **Atrio, À. R.**, Badia, T. & Barnes, J. (2019). On the effect of word order on cross-lingual sentiment analysis. Procesamiento Del Lenguaje Natural, (63), p. 23–30. *Best Paper Award*. <https://doi.org/10.26342/2019-63-2>

Research Projects

2019–...	DOMAT - On-demand Knowledge for Document-level Machine Translation DOMAT (n. 175693) is a Swiss National Science Foundation PhD grant which aims at designing a novel approach for providing on-demand linguistic knowledge to neural machine translation systems.
2022–...	UNISUB UNISUB is a project funded by Armasuisse. Its main goal is to improve unsupervised neural machine translation through an adaptive scheduling of the training tasks and through improved tokenization models, either using subword alignment across the source and target languages, or more advanced subword construction methods.
2020–2021	FamilyMT - Multilingual Neural MT for Families of Languages and Dialects FamilyMT is an Armasuisse-funded project which aims at designing systems for closely related source languages of the same family, and show that this relatedness can be leveraged to improve translation of low-resource languages in multilingual neural machine translation.
2019–2020	Digital Lyric - Création Poétique Assistée par Ordinateur, et Anthologies Numériques Personnalisables Digital Lyric (n. 184330) is a project supported by the SNSF Agora program (main applicant: University of Lausanne). Its main goals are to design a system for interactive poem generation, which combines language models with explicit constraints that can be set by users on form, topic, emotion, and rhyming scheme.

Awards and Distinctions

2019	Best Paper Award “ <i>On the Effect of Word Order on Cross-lingual Sentiment Analysis</i> ”, SEPLN, Bilbao.
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Professional Experience

2019–...	Research Assistant , <i>Haute École d'Ingénierie et de Gestion de Vaud</i> , Switzerland.
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Teaching

2020 & 2022	Teaching assistant for courses Traitement Automatique des Langues (TAL) – 3rd year
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Languages (Proficiency)

Catalan	Native
Spanish	Native
English	C2 - <i>Proficiency Exam in English (University of Cambridge)</i>
French	Professional working
Galician	Professional working

Computer Skills

Programming	Python, Prolog.
Visualizing	Matplotlib, Pandas.
OS	Linux, Windows.
Toolkits	PyTorch, TensorFlow.
Misc	LaTeX, Git.