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Education

- 03.2018– **Ph. D. Language Technology**, *University of Helsinki (Finland)*.
PRESENT Funding from the European Research Council (ERC).
Supervisor: Prof. Jörg Tiedemann & co-Supervisor: Mathias Creutz
Focus Areas: Natural Language Processing, Neural Machine Translation, Math. Modelling
- 09.2015– **M. Sc. Mathematical Engineering**, *Università degli Studi dell'Aquila (Italy)*.
09.2017 Scholarship award from the European Commission.
Thesis: The Vehicle Routing Problem - An Application and Proposed Heuristics.
Adviser: Prof. Claudio Arbib & co-Adviser: Prof. Stefano Smriglio
Focus Areas: Mathematical Modelling, ODEs, PDEs, Optimization GPA: 110/110
- 04.2016– **M. Sc. Technomathematik**, *Hamburg Universität (Germany)*.
09.2016 Joint degree awarded as participant of the Erasmus Mundus Joint MSc. in Mathematical Modelling in Engineering - MathMods (<http://www.mathmods.eu/>)
Focus Areas: non-smooth Convex Optimization and Numerical Approximation methods for PDEs (Galerkin Methods, Finite Differences and Finite Volumes) GPA: 2.03/5
- 08.2008– **B.Sc. Applied Mathematics**, *Instituto Tec. Autónomo de México (Mexico)*.
06.2014 Thesis: A Bayesian Approach to Time Series Smoothing via the Hodrick-Prescott Filter.
Adviser: Prof. Enrique de Alba Guerra
Focus areas: Statistics, Probability, Linear and non-Linear Optimization GPA: 8,4/10
- 09.2011– **Exchange Program from the German Academic Exchange Service (DAAD)**,
07.2012 *Universität des Saarlandes (Germany)*.
Scholarship award from the DAAD. Statistics & economics.

Working Experience

- 03.2018– **Researcher - Doctoral Candidate**, *University of Helsinki, Helsinki (Finland)*.
PRESENT Research on the development of multilingual and multimodal machine translation.
- 10.2017– **Data Science Lab, SEDESOL - Secretariat of Social Development**, Remote Work.
01.2018 Development of a monitor of agricultural production via remote-sensing data as part of a hunger early-warning system.
- 02.2017– **Collaboration, L'Fondry and Università degli Studi di L'Aquila**, L'Aquila (Italy).
09.2017 Customization of the Vehicle Routing Problem for for improving L'Foundry's production line.
- 01.2014– **Project Coordinator, INEGI - Mexico's official statistics institute**, Mexico City.
08.2015 Assisting the INEGI's vice-president. Research on time series and Bayesian statistics.
- 05.2016– **Modelling Camp, Hamburg Universität**, Hamburg (Germany).
06.2016 Implementation and simulation of a mathematical framework for describing crowd dynamics.
- 06.2012– **Vehicle Inspection Intern, Volkswagen**, Hannover (Germany).
08.2012 Creating a GUI to improve the production line operation using an infrared signal manager.

Others

Languages

Native	Spanish	
C2	English	<i>Toefl iBT, 2014 (107/120)</i>
C1	Italian	<i>DALI-C1, 2017 (80.9%)</i>
C1	German	<i>DSH-2, 2012 (86% oral, 67% written)</i>
B1	Finnish	<i>YKI-keskitaso, 2020</i>

Programming

Programs	Python, R, Matlab, SPSS, TeX, Office
ML libraries	pytorch, torchtext, torchaudio, huggingface transformers, pytorch-lightning, nltk
Platforms	Linux, Windows

Publications

- 2021 **An Empirical Investigation of Word Alignment Supervision for Zero-shot Multilingual Neural Machine Translation..**
A. Raganato, R. Vazquez, M. Creutz and J. Tiedemann. In Proceedings of the EMNLP2021. *Accepted for Publication*
- 2021 **On the differences between BERT and MT encoder spaces and how to address them in translation tasks..**
R. Vázquez, H. Celikkanat, M. Creutz and J. Tiedemann. In. Proceedings of the ACL-ICJNLP2021-SRW
- 2021 **The Helsinki Submission to the AmericasNLP shared task..**
R. Vázquez, Y. Scherrer, S. Virpioja and J. Tiedemann. In Proceedings of the NAACL 2021 (AmericasNLP)
- 2020 **A Systematic Study of Inner-Attention-Based Sentence Representations in Multilingual Neural Machine Translation.**
R Vazquez, A Raganato, J Tiedemann and M Creutz. In Computational Linguistics. Volume 46, Issue 2.
- 2020 **The University of Helsinki Submission to the IWSLT2020 Offline Speech Translation Task..**
R Vazquez, M Aulamo, U Sulubacak, and J Tiedemann. In Proceedings of the IWSLT2020
- 2019 **Multilingual NMT with a language-independent attention bridge.**
R Vazquez, A Raganato, J Tiedemann and M Creutz. In Proceedings of the RepL4NLP2019.
- 2019 **An Evaluation of Language-Agnostic Inner-Attention-Based Representations in Machine Translation.**
A Raganato, R Vazquez, M Creutz and J Tiedemann. In Proceedings of the RepL4NLP2019.
- 2019 **The University of Helsinki Submission to the WMT2019 Parallel Corpus Filtering Task.**
R Vazquez, U Sulubacak and J Tiedemann. In Proceedings of the WMT2019
- 2019 **The University of Helsinki Submissions to the WMT2019 Similar Languages Translation Task.**
Y Scherrer, R Vazquez, and S Virpioja. In Proceedings of the WMT2019
- 2019 **The University of Helsinki Submission to the WMT2019 News Translation Task.**
A Talman, U Sulubacak, R Vazquez, Y Scherrer, S Virpioja, A Raganato, A Hurskainen, and J Tiedemann. In Proceedings of the WMT2019

2018 **The MeMAD Submission to the WMT18 Multimodal Translation Task.**

SA Grönroos, B Huet, M Kurimo, J Laaksonen, B Merialdo, P Pham, M Sjöberg, U Sulubacak, J Tiedemann, R Troncy and R Vázquez. In Proceeding of the WMT 2018.