RAÚL VÁZQUEZ

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Education

2018–2023 **PhD Language Technology**, *University of Helsinki (Finland)*.
Funding from the European Research Counci (ERC).
Supervisor: Prof. Jörg Tiedemann & co-Supervisor: Mathias Creutz
Focus Areas: NLP, NMT, Representation Learning

2015–2017 **MSc Mathematical Engineering**, *Università degli Studi dell'Aquila (Italy)*.
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

2016 **MSc Technomathematik**, *Hamburg Universität (Germany)*.
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

2008–2014 **Licentiate(BSc+MSc) Applied Mathematics**, *ITAM (Mexico)*.
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

2011–2012 **Exchange Program from the German Academic Exchange Service (DAAD)**, *Universität des Saarlandes (Germany)*, DAAD Scholarship Award.

Work Experience

2018–2023 **Researcher - Doctoral Candidate**, *University of Helsinki*, Helsiki (Finland).
Research on modular & multilingual machine translation.

2017–2018 **Data Science Lab partner**, *Secretariat of Social Development*, Mexico (Remote).
Development of an agricultural production monitor via remote-sensing data.

2017 **Collaborator**, *LFondry & Università degli Studi di L'Aquila*, L'Aquila (Italy).
Customization of the Vehicle Routing Problem for improving LFoundry's production line.

2014–2015 **Project Coordinator**, *INEGI - Mexico's official statistics institute*, Mexico City.
Assisting the INEGI's vice-president. Research on time series and Bayesian statistics.

2016 **Modelling Camp participant**, *Hamburg Universität*, Hamburg (Germany).
Implementation & simulation of a mathematical framework for describing crowd dynamics.

2012 **Vehicle Inspection Intern**, *Volkswagen*, Hannover (Germany).
Creation of a GUI to improve the production line operation using an infrared signal manager.

Publications

2024 **Proceedings of the 1st Workshop on Uncertainty-Aware NLP (UncertaiNLP 2024)**, *R. Vazquez, H. Celikkanat, D. Ulmer, J. Tiedemann, S. Swayamdipta, W. Aziz, B. Plank, J. Baan, M. de Marneffe . In EACL 2024 (UncertaiNLP).*

2024 **Proceedings of the 1st Workshop on Modular and Open Multilingual NLP (MOOMIN 2024)**, *R. Vazquez, T. Mickus, J. Tiedemann, I. Vulić, A. Üstün. In EACL 2024 (MOOMIN) .*

2024 **MAMMOTH: Massively Multilingual Modular Open Translation @ Helsinki** , *T. Mickus, S. Grönroos, J. Attieh, M. Boggia, O. De Gibert, S. Ji, N. Loppi, A. Raganato, R. Vázquez, J. Tiedemann. In EACL2024..*

2023 **Why Bother with Geometry? On the Relevance of Linear Decompositions of Transformer Embeddings**, *T. Mickus, R. Vazquez. In BlackBoxNLP2023 .*

2023 **Four Approaches to Low-Resource Multilingual NMT: The Helsinki Submission to the AmericasNLP 2023 Shared Task.**, *O. De Gibert, R. Vazquez, M. Aulamo, Y. Scherrer, S. Virpioja, J. Tiedemann. In NAACL2023 (AmericasNLP) .*

2023 **Dozens of Translation Directions or Millions of Shared Parameters? Comparing Two Types of Multilinguality in Modular Machine Translation.**, *M. Boggia, S.A. Grönroos, N. Loppi, T. Mickus, A. Raganato, J. Tiedemann, R. Vazquez. In NoDaLiDa2023..*

2022 **A Closer Look at Parameter Contributions When Training Neural Language and Translation Models.**, *R. Vázquez, H. Celikkanat, V. Ravishankar, M. Creutz, J. Tiedemann. EAMT2022..*

2022 **Latest Development in the FoTran Project – Scaling Up Language Coverage in Neural Machine Translation Using Distributed Training with Language-Specific Components.**, *R. Vázquez, M. Boggia, A. Raganato, N. A. Loppi, S. Grönroos, J. Tiedemann. In EAMT2022..*

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 EMNLP2021..*

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. ACL-ICJNLP2021-SRW.*

2021 **The Helsinki Submission to the AmericasNLP shared task.**, *R. Vázquez, Y. Scherer, S. Virpioja and J. Tiedemann. In NAACL2021 (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 C. 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 IWSLT2020.*

2019 **Multilingual NMT with a language-independent attention bridge**, *R. Vazquez, A. Raganato, J. Tiedemann and M. Creutz. In RepL4NLP2019..*

2019 **An Evaluation of Language-Agnostic Inner-Attention-Based Representations in Machine Translation**, *A. Raganato, R. Vazquez, M. Creutz and J. Tiedemann. In RepL4NLP2019..*

2019 **The University of Helsinki Submission to the WMT2019 Parallel Corpus Filtering Task**, *R. Vazquez, U. Sulubacak and J. Tiedemann. In WMT2019.*

2019 **The University of Helsinki Submissions to the WMT2019 Similar Languages Translation Task**, *Y. Scherrer, R. Vazquez, and S. Virpioja. In 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 WMT2019.*

2018 **The MeMAD Submission to the WMT18 Multimodal Translation Task**, *S.A. Grönroos, B. Huet, M. Kurimo, J. Laaksonen, B. Merialdo, P. Pham, M. Sjöberg, U. Sulubacak, J. Tiedemann, R. Troncy and R. Vázquez. In WMT2018..*