RICARDO COSTA DIAS REI

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EDUCATION

PhD student in Artificial Intelligence

Instituto Superior Técnico

📅 2020 – 2023   📍 Lisbon, Portugal

Thesis title: Robust, Interpretable and Efficient MT Evaluation with Fine-tuned Metrics

Advisors: Luisa Coheur (IST) and Alon Lavie (CMU)

During my PhD, I developed COMET – a neural MT metric that has become the standard in MT research and has significantly influenced the development of new evaluation metrics in other tasks.

Masters in Information Systems and Computer Engineering

Instituto Superior Técnico

📅 2017 – 2019   📍 Lisbon, Portugal

Graduation in Computer Science and Engineering

Instituto Superior Técnico

📅 2013 – 2017   📍 Lisbon, Portugal

WORK EXPERIENCE

Research Scientist

Unbabel

📅 Jul 2018 - Present   📍 Lisbon, Portugal

Visiting Student

Carnegie Mellon University

📅 May 2022 - Sep 2022   📍 Pittsburgh, Pennsylvania, United States

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Teaching Assistant

Instituto Superior Técnico - University of Lisbon

📅 Sep 2021 - Present   📍 Lisbon, Portugal

Teaching assistant for the **Natural Language Processing** MSc course.
Teaching assistant for the **Logic Programming** BSc course.

Text Mining Invited Professor

NOVA IMS - Information Management School

📅 Jan 2019 - Dec 2021   📍 Lisbon, Portugal

ABOUT ME

I'm a final-year PhD student specializing in Machine Translation. Since 2018, I've been a research scientist at Unbabel, contributing to the development of the Unbabel Evaluation and Quality Estimation products.

During my time at Unbabel, I started a PhD as part of a collaborative project known as Multilingual AI Agents Assistants (MAIA), which is a partnership between Unbabel, Instituto Superior Técnico (IST), and Carnegie Mellon University (CMU). Throughout this period, I have made a significant impact on the field of MT as well as on Unbabel's product. This unique intersection between academia and industry has broadened my skills beyond research and provided me with invaluable real-world experience.

STRENGTHS

Hard-working   Critical Thinking

Good Time Management   Resilient

Artificial Intelligence

Natural Language Processing

Computer Science

LANGUAGES

Portuguese   ●●●●●
English   ●●●●○

HOBBIES

Beyond my academic life, I have a strong connection with the ocean and in my free time, you can often find me surfing, going to the gym, or running along the coastline

RESEARCH PUBLICATIONS

Ricardo Rei, Nuno M. Guerreiro, Marcos Treviso, Luisa Coheur, Alon Lavie, André F.T. Martins (2022). **"The Inside Story: Towards Better Understanding of Machine Translation Neural Evaluation Metrics".** Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics **(ACL)**. URL: `https://aclanthology.org/2023.acl-short.94/`

Chrysoula Zerva, Taisiya Glushkova, **Ricardo Rei**, André F. T. Martins (2022). **"Disentangling Uncertainty in Machine Translation Evaluation".** Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing **(EMNLP)**. URL: `https://aclanthology.org/2022.emnlp-main.591/`

Markus Freitag, **Ricardo Rei**, Nitika Mathur, Chi-kiu Lo, Craig Stewart, Eleftherios Avramidis, Tom Kocmi, George Foster, Alon Lavie, André F. T. Martins (2022). **"Results of WMT22 Metrics Shared Task: Stop Using BLEU – Neural Metrics Are Better and More Robust".** Proceedings of the Seventh Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2022.wmt-1.2/`

Chrysoula Zerva, Frédéric Blain, **Ricardo Rei**, Piyawat Lertvittayakumjorn, José G. C. de Souza, Steffen Eger, Diptesh Kanojia, Duarte Alves, Constantin Orăsan, Marina Fomicheva, André F. T. Martins, Lucia Specia (2022). **"Findings of the WMT 2022 Shared Task on Quality Estimation".** Proceedings of the Seventh Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2022.wmt-1.3/`

Duarte Alves, **Ricardo Rei**, Ana C Farinha, José G. C. de Souza, André F. T. Martins (2022). **"Robust MT Evaluation with Sentence-level Multilingual Augmentation".** Proceedings of the Seventh Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2022.wmt-1.43/`

Ricardo Rei, José G. C. de Souza, Duarte Alves, Chrysoula Zerva, Ana C Farinha, Taisiya Glushkova, Alon Lavie, Luisa Coheur, André F. T. Martins (2022). **"COMET-22: Unbabel-IST 2022 Submission for the Metrics Shared Task".** Proceedings of the Seventh Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2022.wmt-1.52/`

Ricardo Rei, Marcos Treviso, Nuno M. Guerreiro, Chrysoula Zerva, Ana C Farinha, Christine Maroti, José G. C. de Souza, Taisiya Glushkova, Duarte Alves, Luisa Coheur, Alon Lavie, André F. T. Martins (2022). **"CometKiwi: IST-Unbabel 2022 Submission for the Quality Estimation Shared Task".** Proceedings of the Seventh Conference on Machine Translation (WMT). URL: `https://aclanthology.org/2022.wmt-1.60/`

Patrick Fernandes, António Farinhas, **Ricardo Rei**, José G. C. de Souza, Perez Ogayo, Graham Neubig, André F. T. Martins (2022). **"Quality-Aware Decoding for Neural Machine Translation".** Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics **(NAACL)**. URL: `https://arxiv.org/pdf/2205.00978.pdf`

Ricardo Rei, Ana C Farinha, José G. C. de Souza, Pedro Ramos, André F. T. Martins, Pedro Ramos, Luísa Coheur, Alon Lavie (2022). **"Searching for Cometinho: The Little Metric That Could".** Proceedings of the 23rd Annual Conference of the European Association for Machine Translation **(EAMT)**. URL: `https://aclanthology.org/2022.eamt-1.9/`

Ricardo Rei, Ana C Farinha, Chrysoula Zerva, Daan van Stigt, Craig Stewart, Pedro Ramos, Taisiya Glushkova, André F. T. Martins, Alon Lavie (2021). **"Are References Really Needed? Unbabel-IST 2021 Submission for the Metrics Shared Task".** Proceedings of the Sixth Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2021.wmt-1.111/`

Markus Freitag, **Ricardo Rei**, Nitika Mathur, Chi-kiu Lo, Craig Stewart, George Foster, Alon Lavie, Ondrej Bojar (2021). **"Results of the WMT21 Metrics Shared Task: Evaluating Metrics with Expert-based Human Evaluations on TED and News Domain".** Proceedings of the Sixth Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2021.wmt-1.73/`

Chrysoula Zerva, Daan van Stigt, **Ricardo Rei**, Ana C Farinha, Pedro Ramos, José G. C. de Souza, Taisiya Glushkova, Miguel Vera, Fabio Kepler, André F. T. Martins (2021). **"IST-Unbabel 2021 Submission for the Quality Estimation Shared Task".** Proceedings of the Sixth Conference on Machine Translation **(WMT)**. URL: `https://aclanthology.org/2021.wmt-1.102/`

Marcos Treviso, Nuno M. Guerreiro, **Ricardo Rei**, André F. T. Martins (2021). **"IST-Unbabel 2021 submission for the explainable quality estimation shared task".** Proceedings of the 2nd Workshop on Evaluation and Comparison of NLP Systems **(Eval4NLP)**. URL: `https://aclanthology.org/2021.eval4nlp-1.14/`

Taisiya Glushkova, Chrysoula Zerva, **Ricardo Rei**, André F. T. Martins (2021). **"Uncertainty-Aware Machine Translation Evaluation"**. Findings of the Association for Computational Linguistics: **EMNLP** 2021. URL: `https://aclanthology.org/2021.findings-emnlp.330/`

Nuno Miguel Guerreiro, **Ricardo Rei**, Fernando Batista (2021). **"Towards better subtitles: A multilingual approach for punctuation restoration of speech transcripts"**. Journal - Expert Systems with Application. URL: `https://www.sciencedirect.com/science/article/abs/pii/S0957417421011180`

Ricardo Rei, Ana C Farinha, Craig Stewart, Luisa Coheur and Alon Lavie (2021). **"MT-Telescope: An interactive platform for contrastive evaluation of MT systems"**. Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing: System Demonstrations. URL: `https://aclanthology.org/2021.acl-demo.9/`

Vânia Mendonça, **Ricardo Rei**, Luisa Coheur, Alberto Sardinha and Ana Lúcia Santos (2021). **"Online Learning Meets Machine Translation Evaluation: Finding the Best Systems with the Least Human Effort"**. Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (Volume 1: Long Papers) **(ACL)**. URL: `https://aclanthology.org/2021.acl-long.242/`

Bruno Jardim, **Ricardo Rei** and Mariana S. C. Almeida (2021). **"Multilingual Email Zoning"**. Proceedings of the 16th Conference of the European Chapter of the Association for Computational Linguistics: Student Research Workshop. Association for Computational Linguistics **(EACL)**, Publishing, pp. 88–95. URL: `https://www.aclweb.org/anthology/2021.eacl-srw.13/`

Ricardo Rei, Craig Stewart, Ana C Farinha and Alon Lavie (2020). **"Unbabel's Participation in the WMT20 Metrics Shared Task"**. In: Proceedings of the Fifth Conference on Machine Translation. Association for Computational Linguistics **(WMT)**, Publishing, pp. 911–920. URL: `https://www.aclweb.org/anthology/2020.wmt-1.101/`

Ricardo Rei, Craig Stewart, Ana C Farinha and Alon Lavie (2020). **"COMET - Deploying a New State-of-the-art MT Evaluation Metric in Production"**. In: Proceedings of the 14th Conference of the Association for Machine Translation in the Americas (Volume 2: User Track). Association for Computational Linguistics, Publishing, pp. 78–109. URL: `https://www.aclweb.org/anthology/2020.amta-user.4/`

Ricardo Rei, Craig Stewart, Ana C Farinha and Alon Lavie (2020). **"COMET: A Neural Framework for MT Evaluation"**. In: Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing **(EMNLP)**. Association for Computational Linguistics, Publishing, pp. 2685-2702. URL: `https://www.aclweb.org/anthology/2020.emnlp-main.213/`

Ricardo Rei, Nuno Miguel Guerreiro and Fernando Batista (2020). **"Automatic Truecasing of Video Subtitles Using BERT: A Multilingual Adaptable Approach"**. In: Information Processing and Management of Uncertainty in Knowledge-Based Systems. Ed. by Marie-Jeanne Lesot et al. Cham: Springer International Publishing, pp. 708–721. ISBN: 978-3-030-50146-4.