

## Iacer Calixto

**Nationality:** Brazilian citizen, born in July, 1983.  
**Languages:** Portuguese (native); English (fluent); French, Italian, and Spanish (professional proficiency).  
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## Work Experience

Mar/2019—  
Now **Postdoctoral Research Fellow**  
**CIMS, New York University (NYU) & ILLC, University of Amsterdam (UvA)**  
I am currently a [Marie Skłodowska-Curie Global Fellow](#) and I work on a personal research project called “IMAGINE: Informing Multi-modal LAnguage Generation wIth world kNowledge”. I am visiting **New York University’s Courant Institute for Mathematical Sciences** and **Centre for Data Science** for 1 year and 9 months starting in June 2019, and **Facebook AI Research** for 3 months starting in March 2021, after which I return to the ILLC in the University of Amsterdam.

Mar/2018—  
Now **Postdoctoral Research Associate**  
**ILLC, University of Amsterdam (UvA), Amsterdam, Netherlands.**  
I was a Research Associate at the ILLC and worked with Prof. Khalil Sima’an. I investigated different aspects of *multi-modal natural language processing* (NLP) and (neural) *machine translation* (NMT), *latent variable models*, and *representation learning*.

Jul/2017—  
Mar/2018 **Postdoctoral Research Associate**  
**ADAPT Centre, Dublin City University, School of Computing, Dublin, Ireland.**  
As a Research Associate at the ADAPT Centre my main activities included working with PhD students, on research projects with industry partners, and co-supervising MSc. students. I worked on a project with *eBay Inc.* where we applied *multi-modal NMT* to improve their e-commerce platform. The main goal was to train neural models to translate product listings while also using the products images, both user-generated data.

Oct/2014—  
Dec/2014 **Research Assistant (Intern)**  
**Sapienza Università di Roma, Rome, Italy.**  
I used machine learning to automatically identify images available in Wikipedia article pages to illustrate concepts in BabelNet.

Jun/2012—  
Sep/2012 **Research Assistant (Intern)**  
**The University of Sheffield, Sheffield, United Kingdom.**  
I worked on exploiting images as contextual information to increase the quality of statistical machine translation systems. Funded by the EPSRC Network on Vision and Language, UK.

## Teaching Experience

Apr/2018—  
Jun/2018 **Instructor in the Master of AI at the ILLC-UvA, Amsterdam, The Netherlands.**  
*Natural Language Processing 2*: Statistical and neural machine translation.

Feb/2015—  
Jun/2015 **Teaching Assistant, Dublin City University (DCU), Dublin, Ireland.**  
*CA446 Statistical Machine Translation*: teaching, coding/evaluation of lab exercises and grading.  
*CA229 Developing Internet Applications*: PHP+MySQL, lab work and graded exams.

Feb/2010—  
Nov/2010 **Teaching Assistant, Universidade Federal de Goiás (UFG), Goiânia, Brazil.**  
*Theory of Computation*: taught classes, solved in-class exercises and graded exams.

## Supervision

	Period	Student	Title
Msc. Thesis	Feb/19–now	J. Leible	Jointly learning to tag images and translate.
	Feb/19–now	V. Milewski	Image description generation with objects and graph reasoning.
	Jan/19–now	H. Alberts	Grounding image encoders using knowledge base information.
	Jul/18–Jun/19	F. Curi	Towards Incorporating Typological Linguistic Features into Low-resource Machine Translation.
Project AI	Jul/18– Dec/18	V. Milewski	A topic mixture model for neural image description generation.

## Education

- 2013—2017    **PhD. in Computer Science**  
**Dublin City University (DCU), School of Computing, Dublin, Ireland.**  
**title:** [Incorporating visual information into neural machine translation.](#)  
**supervisors:** Prof. Qun Liu (DCU) and Prof. Nick Campbell (Trinity College Dublin).  
**summary:** I proposed different ways to incorporate features derived from images, e.g. visual features, into neural machine translation (NMT) and obtained promising results. I used both *global* and *local* visual features, and applied multi-modal NMT models to translate image descriptions from Flickr and also product listings from eBay, in both cases using the raw image as an additional input to the model.
- 2011—2013    **Erasmus Mundus Master, Univ. of Wolverhampton, do Algarve, de Franche-Comté.**  
**summary:** Worked on the automatic extraction of information from research papers. It covered the fields of machine learning, NLP, information extraction and data mining (GPA 14.8/20).
- 2009—2011    **Master in Computer Science (MSc.), Federal University of Goiás, Goiânia, Brazil.**  
**summary:** Worked on an optimisation problem to improve cities' traffic, namely the *estimation of origin-destination demand matrices based on fuzzy linear programming for Brazilian congested traffic networks*. Covered computer theory, graphs, algorithms and non-linear optimisation. Registered for 8 modules and obtained the highest grade (A) in all of them.
- 2003—2007    **Bachelor in Information Systems (BSc.), Faculdades ALFA, Goiânia, Brazil.** GPA 8.52/10.

## Soft skills

- Excellent written and oral communication, and great interpersonal skills;
- Great leadership and teamwork attested by multiple contributions to successful academic and industrial projects;
- Excellent problem solving and research and development skills;
- Broad international experience: Netherlands, Canada, Portugal, France, Italy, UK, Ireland, and Brazil.

## Technical skills (low to high experience, 1–5)

**Programming languages:** Python (5), Java (4.5), PHP (4.5), C/C++ (4), Shell (bash) (4), Perl (3.5), Javascript (AJAX, JQuery) (3.5), Matlab (3), Octave (3). (X)HTML (4.5), CSS (4). XML (4.5), XSLT (4.5), XPath (4).

**Machine Learning:** PyTorch (5), numpy (5), Theano (5), Tensorflow (4.5), scipy (4.5), scikit-learn (4.5), Keras (4), Caffe (4), IBM CPLEX (3), GLTK (3).

**Operating Systems and technologies:** Ubuntu/Debian (5), Windows (5),  $\LaTeX$  (5), MySQL (5), HPC/cluster (PBS and Slurm) (4.5), Linux VMs (4.5), PostgreSQL (4.5), OpenSUSE (4), Windows Server (3.5), SQL Server (3.5).

## Grants and Awards

- Jun/2019–  
Mar/2022 **Marie Skłodowska-Curie Global Fellowship.** I was awarded an **MSCA Fellowship** to work on my project **IMAGINE: Informing Multi-modal Language Generation With World Knowledge**. I am visiting New York University in the US for 1 year and 9 months (collaborating with **Kyunghyun Cho**), will visit **Facebook Artificial Intelligence Research** in France for 3 months (collaborating with **Antoine Bordes**), and the **University of Amsterdam** for 9 more months (collaborating with **Raquel Fernández**). Valued at €232,393.92.
- Sep/2017 **Best Long Paper Award** in **The International Conference on Natural Language Generation (INLG)** for the paper *“Linguistic realisation as machine translation: Comparing different MT models for AMR-to-text generation”*.
- Jan/2017 **ADAPT Centre Director’s Commercialisation Award** for collaboration with the industry, valued at €2,500.
- Apr/2017 **DCU Postgraduate Grant.** Travel grant to enable conference attendance, valued at €500.
- Nov/2016 **DCU Invent Commercialisation Award** for industry applications of multi-modal neural MT, valued at €300.
- 2015–2017 **COST Action IC1307 Integrating Vision and Language.** Received *five grants* from the COST Action IC1307 to present my work at three workshops (2015, 2016, 2017), to visit the Institute for Logic, Language and Computation (ILLC) in the University of Amsterdam (2016), and to visit the Department of Computer Science in the University of Sheffield (2017). Valued at €6,580.
- 2013–2017 **Science Foundation Ireland, SFI.** PhD is funded by SFI through the ADAPT Centre, valued at €16,000 a year for three years.
- 2011–2013 **Erasmus Mundus (EM) Scholarship.** Master in NLP&HLT was funded by an EM scholarship, valued at €24,000 a year for two years.
- 2009–2011 **CAPES Scholarship (Brazil).** MSc. was funded by a CAPES Scholarship, valued at €5,160 a year for two years.
- 2007–2008 **Information Systems Best Student Award.** Won the “Best student award” in two semesters, competing against all Information Systems BSc. students in both cases (~ 300 students).

## Invited Talks, Lectures and Seminars

- 27 Jun/2018 | **Summer School on Translation (In Portuguese) in the Faculty of Arts of Univ. do Porto**  
Invited Lectures on Statistical and neural machine translation.
- 8 Dec/2017 | **GIAN Workshop, Indian Institute of Technology Patna.**
- 25 Oct/2017 | **Colloquium of Department of Computational Linguistics, Universität Heidelberg.**
- 6 July/2017 | **NLP Group Seminar, Department of Computer Science, The University of Sheffield.**
- 5 Apr/2016 | **Computational Linguistics Seminar, ILLC, The University of Amsterdam.**

## Scientific outreach

- Dec/2016 | **Dublin Natural Language Processing Meet-up in Workday Inc., Dublin.** Gave the talk “Multi-modal machine translation: what is it and why bother?”
- Feb/2016 | **Dublin Machine Learning Meet-up in Nitro HQ, Dublin.** Gave the talk “Multi-modal multilingual representations for NLP”.

## Professional services

I often contribute to the research community by co-organising scientific events, as a reviewer and in programme committees.

Year		Conference, Journal, or Workshop	Capacity
2019	journal	Artificial Intelligence (Elsevier), Natural Language Engineering IEEE Transactions on Neural Networks and Learning Systems	Reviewer
	conference	NAACL, ACL, EMNLP, IJCAI, AAAI, MT Summit	PC Member / Reviewer
	workshop	Shortcomings in Vision & Language (SiVL)	PC Member
2018	journal	Machine Translation, Computational Linguistics	Reviewer
	conference	ACL, EMNLP, COLING, IJCAI-ECAI, EAMT	PC Member / Reviewer
	workshop	LoResMT Workshop (AMTA)	Co-Organiser
2017	conference	RANLP	Reviewer
	workshop	Cupral Workshop (IJCNLP 2017)	Co-Organiser

## Selected Research Activities and Outcomes

- I am visiting **Kyunghyun Cho**'s group in **New York University** for a total of 21 months. We will be collaborating on the project **IMAGINE: Informing Multi-modal Language Generation With World Knowledge**, as part of my **Marie Skłodowska-Curie Global Fellowship**.
- In the last years, I have presented my work at the following conferences, shared tasks, and workshops: **ACL 2019**, **ACL 2017**, **EMNLP 2017**, **EACL 2017**, **RANLP 2017**, **Multi-modal MT 2017** (part of WMT), **iVision&Language Workshop 2017** (part of EACL).
- A data-driven study reported by a Lecturer at the University of Cambridge (Marek Rei) had me included among **the most prolific first authors** in top-tier Machine Learning / Natural Language Processing conferences in 2017 (see <http://www.marekrei.com/blog/ml-nlp-publications-in-2017/>).
- I spearheaded the discussion and drafting of the COST Action proposal **Multi3Generation** on the topic of natural language generation, led by prof. Isabelle Augenstein (University of Copenhagen). I am member in the Management Committee representing UvA and the Netherlands.
- I am visiting or have visited leading international and European research groups working at the intersection of vision and language: **Kyunghyun Cho** in **New York University**, **Lucia Specia** at the **University of Sheffield** (now in Imperial College London), **Desmond Elliott** at the **University of Amsterdam** (now in the University of Copenhagen), **Stefan Riezler** at the **University of Heidelberg**.
- I have participated as NLP specialist in the defence of the **DO-IT Project: Detecting Oncology Information Technology** proposal to Cancer Research UK (CRUK) Grand Challenge Advisory Panel.
- I visited Lucia Specia's NLP group in the Department of Computer Science in the **University of Sheffield**, where we worked on attention strategies for multi-task learning.
- I visited Desmond Elliott and Khalil Sima'an's group in the Institute for Logic, Language and Computation (ILLC) in the **University of Amsterdam**, where we worked on multi-task learning models for multi-modal translation.

## Selected peer-reviewed publications

I did not publish in 2018 because I was involved on a more applied project with eBay Inc. while I was a Research Associate at the ADAPT Centre, and was concomitantly wrapping-up my PhD work.

- [1] **ACL 2019.** Iacer Calixto, Miguel Rios, Wilker Aziz. [Latent Variable Model for Multi-modal Translation](#). In: Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics.
- [2] **MT Journal 2019.** Iacer Calixto, Qun Liu. [An Error Analysis for Image-Based Multi-Modal Neural Machine Translation](#). Machine Translation Journal: Special Issue in Human Factors in Neural Machine Translation.
- [3] **CICLing 2019.** Haree Jeyaram, Mohammed Hasanuzzaman, Iacer Calixto, Andy Way. *Multimodal Image News Article Alignment*. (paper accepted). In: Proceedings of CICLing 2019, the 20th International Conference on Computational Linguistics and Intelligent Text Processing.
- [4] **ACL 2017.** Iacer Calixto, Qun Liu, Nick Campbell. [Doubly-Attentive Decoder for Multi-modal Neural Machine Translation](#). In: Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics.
- [5] **EMNLP 2017.** Iacer Calixto, Qun Liu. [Incorporating Global Visual Features into Attention-Based Neural Machine Translation](#). In: Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing.
- [6] **EACL 2017.** Iacer Calixto, Daniel Stein, Evgeny Matusov, Pintu Lohar, Sheila Castilho, Andy Way. [Using Images to Improve Machine-Translating E-Commerce Product Listings](#). In: The Meeting of the European Chapter of the Association for Computational Linguistics.
- [7] **RANLP 2017.** Iacer Calixto, Qun Liu. [Sentence-Level Multilingual Multi-Modal Embedding for Natural Language Processing](#). In: Recent Advances in Natural Language Processing.
- [8] **VL 2017.** Iacer Calixto, Daniel Stein, Evgeny Matusov, Sheila Castilho, Andy Way. [Human Evaluation of Multi-modal Neural Machine Translation: A Case-Study on E-Commerce Listing Titles](#). In: The Integrating Vision & Language Workshop.
- [9] **INLG 2017.** Thiago Castro Ferreira, Iacer Calixto, Sander Wubben and Emiel Krahmer. [Linguistic realisation as machine translation: Comparing different MT models for AMR-to-text generation](#). In: The International Natural Language Generation conference. **Best Long Paper Award**.
- [10] **PBML 2017.** Sheila Castilho, Joss Moorkens, Federico Gaspari, Iacer Calixto, John Tinsley and Andy Way. [Is Neural Machine Translation the New State-of-the-Art?](#) In: Prague Bulletin of Mathematical Linguistics.
- [11] **WMT 2016.** Iacer Calixto, Desmond Elliott, Stella Frank. [DCU-UvA Multimodal MT System Report](#). In: The First Conference on Machine Translation.
- [12] **WMT 2016.** Chris Hokamp, Iacer Calixto. [Multimodal neural machine translation using minimum risk training](#). In: The First Conference on Machine Translation.
- [13] **LREC 2016.** Debasis Ganguly, Iacer Calixto, Gareth Jones. [Developing a Dataset for Evaluating Approaches for Document Expansion with Images](#). In: Proceedings of the Tenth International Conference on Language Resources and Evaluation.

## Older articles and papers

- [14] **RANLP 2015.** Sanja Stajner, Iacer Calixto, Horacio Saggion. [Automatic Text Simplification for Spanish: Comparative Evaluation of Various Simplification Strategies](#). In: Recent Advances in Natural Language Processing.
- [15] **WMT 2014.** Chris Hokamp, Iacer Calixto, Joachim Wagner, Jian Zhang. [Target-Centric Features for Translation Quality Estimation](#). In: The Workshop on Statistical Machine Translation.

- [16] **WMT 2014**. Jian Zhang, Xiaofeng Wu, **Iacer Calixto**, Ali Vahid, Andy Way, Qun Liu. *Experiments in Medical Translation Shared Task at WMT 2014*. In: The Workshop on Statistical Machine Translation.
- [17] **EJOR 2013**. Les Foulds, Hugo do Nascimento, **Iacer Calixto**, Bryon Hall, Humberto Longo. *A fuzzy set based approach to origin-destination matrix estimation in urban traffic networks with imprecise data*. In: **The European Journal of Operations Research**.
- [18] **VL 2012**. **Iacer Calixto**, Lucia Specia, Teófilo de Campos. *Images as context in Statistical Machine Translation*. In: The Workshop on Vision and Language.
- [19] **SBPO 2011**. Les Foulds, Hugo do Nascimento, **Iacer Calixto**, Bryon Hall, Humberto Longo. *A fuzzy set approach to estimating OD matrices in congested Brazilian traffic networks*. In: XLIII Simpósio Brasileiro de Pesquisa Operacional.