Ronald A. Cardenas Acosta

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Research Interests

- Machine reading comprehension, controlled natural language generation, common-sense reasoning and inference.
- Psycholinguistic models of text comprehension, computational models of human memory.
- Unsupervised and semi-supervised learning.

Education

Centre for Doctoral Training in NLP Oct. 2019 - Aug. 2023 (expected)
School of Informatics
University of Edinburgh

M.Sc. Language and Communication Technologies Oct. 2017 - Jul. 2019
Charles University. Prague, Czech Republic
University of Malta, Malta

B.Sc Mechatronics Aug. 2009 - Dec. 2015
National University of Engineering. Lima, Peru.
Summa Cum Laude

Summer School Training

- Mediterranean Machine Learning Summer School, M2L Sept. 2022
- Lisbon machine Learning Summer School, LxMLS Jul. 2014, '20, '22
- Advanced Language Processing Winter School, ALPS Jan. 2021
- Machine Learning Summer School, MLSS Aug. 2015
- Competitive Programming Summer School, Univ. of Campinas, Brazil. Jan. 2013

Relevant Publications

R.A. Cardenas, S.B. Cohen, and M. Galle. On the Trade-off between Redundancy and Local Coherence in Summarization. *arXiv:2205.10192, 2022. Under revision in the Journal for Artificial Intelligence Research.*

R.A. Cardenas. Universal Morphological Analysis using Reinforcement Learning. *Masters thesis. Charles University in Prague, 2019.*

R.A. Cardenas, Y. Ling, J. Heng, and J. May. A Grounded Unsupervised Universal Part-of-Speech Tagger for Low-Resource Languages. *Proceedings of NAACL-HLT 2019 (long papers).*

S. Narayan, R.A. Cardenas, N. Papasarantopoulos, S.B. Cohen, M. Lapata, J. Yu, Y. Chang. Document modeling with external attention for sentence extraction. *Proceedings of the 56th Annual Meeting of the ACL (long papers), 2018.*

Research Experience

Amazon Research, Cambridge, UK Jun. - Aug. 2019
I was part of the Alexa team, working on transfer learning across tasks involving question domain categorization and paraphrase detection.

University of Southern California May. - Aug. 2018
I worked on the application of decipherment to POS tagging for under-resourced languages.

Charles University in Prague   Oct 2017 - Apr 2018
I worked in morphological analysis for Peruvian native languages, and joint learning of machine translation and tagging for en-de.

University of Edinburgh   Jun - Jul 2017
I worked on machine reading comprehension and the influence of difference degrees of contextual richness for Question Answering.

Pontifical Catholic University of Peru   Nov 2016 - May 2017
I worked on collection of Southern Quechua audio data, the development of a speech recognizer and its deployment in a prototype android app.

Teaching and Mentoring Experience

School of Informatics, University of Edinburgh, UK   Sept. 2019, Sept.2020
Teaching assistant for the class *Foundaments in NLP* and *Advanced NLP*, offered to last-year undergraduates. I was in charge of the preparation of coursework material, lab demonstrations, and grading.

HackSpace, Lima, Peru   Jul. - Nov.2016
www.hackspace.pe
Lecturer of a 32-hours mini-course named *Introduction to Machine Learning and NLP* aimed to IT professionals and focused in practical applications, with practical labs included.

Artificial Intelligence Research Lab (GISCIA), Lima, Peru   2014-2015
Served as vice-president of GISCIA, organizing seminars, workshops and talks to introduce undergraduates to research projects in Machine Learning.
Also served as training coach of undergraduate students' teams for competitive programming contests, such as the ACM ICPC.

Relevant Poster Sessions

- On the Trade-off between Redundancy and Local Coherence in Summarization. M2L 2022.
- Unsupervised Extractive Summarization by Human Memory Simulation. ALPS 2021, ELLIS-NLP Workshop 2021.
- Morphological Analysis through Operation-based word formation. SIGMORPHON 2019.

Invited Talks, Service

- Reviewer at the ACL Student Research Workshop (2020 to date) and ARR (2021 to date).
- Volunteer and tutor at LxMLS 2022.
- Panelist."LxMLS Alumni Panel", LxMLS 2020.
- Invited talk. *"Morphological Process Transduction: Towards interpretable multi-lingual morphological analysis"*. University of Malta, Faculty of Information and Communication Technologies. November 2019.

Achievements, Honours and Awards

- Erasmus Mundus Scholarship for Joint Master Degree (2017-2019). European Commission.
- Research Grant (2014,2015). Research Institute of the National University of Engineering.
- 7th (2012) and 5th place (2014) in ACM-ICPC South American Regional Contest, IBM.
- 11th Place (world wide), IEEExtreme Programming Competition (2013).
- 1st Place, IEEExtreme - INTERCON National Programming Contest, Peru, 2012.
- Dean's List, 2012-2014.

Technical Strengths

- *Programming Languages:*
  Python, C/C++, Java, R, Perl, Bash, JavaScript, Ruby.
- *Databases:* MySQL, MongoDB.

- *Deep Learning frameworks:* TensorFlow, PyTorch, MxNet, JAX, Haiku.

References

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