Maurício Gruppi

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- Machine Learning   • Natural Language Processing   • Representation Learning   • Misinformation

EDUCATION

PhD, Computer Science | Rensselaer Polytechnic Institute, USA   **Sep 2017 — Dec 2022 [Expected]**
M.Sc, Computer Science | Federal University of Viçosa, Brazil   **Mar 2014 — Nov 2016**
B.Sc, Computer Science | Federal University of Viçosa, Brazil   **Mar 2009 — Feb 2014**

RESEARCH EXPERIENCE

Graduate Research Extern   **May 2022 – August 2022**
IBM Research, USA

- **Mentor**: Keerthiram Murugesan
- Explored language representation models for text-based reinforcement learning and common sense reasoning in TextWorld and Jericho environments.

Graduate Research Assistant   **Sep 2021 – Jan 2022**
Rensselaer Polytechnic Institute, USA

- **Advisors**: Tomek Strzalkowski, Sibel Adalı
- Used NLP models on the task of identification and extraction of agenda-driven content from multilingual unstructured texts in social media.

Graduate Research Assistant   **Sep 2019 — Aug 2021**
Rensselaer Polytechnic Institute, USA

- **Advisors**: Sibel Adalı(RPI), Pin-Yu Chen(IBM) | **Funding**: IBM
- Investigated and developed methods to model lexical semantic differences across communities and groups of speakers of a given language. This was achieved by combining word embeddings and alignment techniques as well as self-supervised learning to optimize the alignment.

Undergraduate Research Assistant   **Sep 2012 — Feb 2013**
Hanze Institute of Technology, The Netherlands

- **Advisor**: Fenna Feenstra | **Funding**: CAPES/Nuffic
- Assisted in the development of a low-cost eye-tracking device, using off-the-shelf hardware components and open source software, to provide accessibility alternatives to physically disabled primary school students.

Undergraduate Research Assistant   **Mar 2011 — Jan 2012**
Federal University of Viçosa, Brazil

- **Advisor**: Marcus V. Alvim Andrade | **Funding**: Fapemig
- Developed and applied heuristics to determine the optimal point on a terrain to build a water reservoir, avoiding potential damage caused to communities and wildlife in the surrounding area.

TEACHING EXPERIENCE

Graduate Teaching Assistant   **Sep 2017 — May 2019**
Rensselaer Polytechnic Institute, USA

- Assisted in programming and data structures courses and labs (Python, C++ and Visual Basic).

Lecturer   **May 2015 — May 2017**
Federal University of Viçosa, Brazil

- Taught programming courses to undergraduate students (C++ and Python).

Graduate Teaching Assistant   **Mar 2014 — Dec 2014**
Federal University of Viçosa, Brazil

- Provided assistance to programming lab sections.

OTHER WORK EXPERIENCES

Front-end Developer   **May 2019 — Aug 2019**
Rensselaer Polytechnic Institute, USA

- Worked as front-end developer for the MetPetDB project at RPI over the summer of 2019 (HTML, Javascript and Python).

Front-end Developer   **May 2014 — May 2015**
Federal University of Viçosa, Brazil

- Developed educational games and applications to support remote learning for high school and undergraduate students (Flash and ActionScript).

SKILLS

Programming	Python, JavaScript, C++, C, HTML, Java, Visual Basic.
Machine Learning	Scikit-learn, PyTorch, TensorFlow, HuggingFace Transformers, SpaCy.
Front-end	HTML5, CSS, Bootstrap, Vue.js.
Back-end	Python: Flask, Django-Rest API. Databases: PostgreSQL, SQLite, SQL Server.

COMMUNITY SERVICE

Invited Reviewer/PC Member
- (Journal) IEEE Transactions on Audio, Speech, and Language Processing
- (Journal) Information Processing & Management
- (Conference) ICWSM 2022
- (Workshop) LChange'21, LChange'22
- (Workshop) SemEval 2020

PUBLICATIONS

Research Papers

1. **Gruppi**, M. *et al. SciLander: Mapping the Scientific News Landscape* in *International AAAI Conference on Web and Social Media 2023* (2023).

2. **Gruppi**, M., Adali, S. & Chen, P.-Y. *SenSE: A Toolkit for Semantic Change Exploration via Word Embedding Alignment* in *Proceedings of the 36th AAAI Conference on Artificial Intelligence* (2022). https://sense.mgruppi.me/.

3. **Gruppi**, M., Adali, S. & Chen, P.-Y. *System Demonstration – SenSE: A Toolkit for Semantic Change Exploration via Word Embedding Alignment* in *35th Conference on Neural Information Processing Systems (NeurIPS)* (2021).

4. **Gruppi**, M., Chen, P.-Y. & Adali, S. *Fake it Till You Make it: Self-Supervised Semantic Shifts for Monolingual Word Embedding Tasks* in *Proceedings of the AAAI Conference on Artificial Intelligence* **35** (2021), 12893–12901.

5. **Gruppi**, M., Adali, S. & Chen, P.-Y. *SChME at SemEval-2020 Task 1: A Model Ensemble for Detecting Lexical Semantic Change* in *Proceedings of the Fourteenth Workshop on Semantic Evaluation* (2020), 105–111.

6. Trujillo, M. *et al. What is BitChute? Characterizing the* in *Proceedings of the 31st ACM Conference on Hypertext and Social Media* (2020), 139–140.

7. **Gruppi**, M., Horne, B. D. & Adalı, S. NELA-GT-2020: A Large Multi-Labelled News Dataset for The Study of Misinformation in News Articles. *arXiv preprint arXiv:2102.04567* (2021).

8. Horne, B. D., **Gruppi**, M. & Adali, S. *Trustworthy misinformation mitigation with soft information nudging* in *2019 First IEEE International Conference on Trust, Privacy and Security in Intelligent Systems and Applications (TPS-ISA)* (2019), 245–254.

9. **Gruppi**, M., Horne, B. D. & Adali, S. An Exploration of Unreliable News Classification in Brazil and The US. *arXiv preprint arXiv:1806.02875* (2018).

10. **Gruppi**, M. G. *et al.* using rational numbers and parallel computing to efficiently avoid round-off errors on map simplification. *Revista Brasileira de Cartografia* **68** (2016).

11. **G. Gruppi**, M. *et al. An Efficient and Topologically Correct Map Generalization Heuristic* in *Proceedings of the 17th International Conference on Enterprise Information Systems-Volume 1* (2015), 516–525.

Patent

1. Chen, P.-Y., **Gruppi**, M. & Adalı, S. *Self-supervised Semantic Shift Detection and Alignment* US Patent Application 17/161778. First published on August 4th, 2022. 2022.