

Danilo Neves Ribeiro

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RESEARCH INTERESTS

The goal of my research is to build intelligent agents that are able to incorporate knowledge and reasoning when processing natural language, either by improving current NLP systems or by creating innovative ways of learning and applying knowledge to solve language tasks. Recently I've been investigating how to enhance artificial neural networks in the context of continuous learning. My current research includes natural language understanding, question-answering, knowledge extraction, dialogue systems, reasoning, data efficient learning and continuous learning.

EDUCATION

Northwestern University – Evanston, USA (09/2017 - Present)

- Computer Science PhD candidate. Cumulative GPA: 3.98 / 4.0

Universidade Federal de Pernambuco – Recife, Brazil (07/2010 - 01/2016)

- Bachelor's Degree in Computer Science. Cumulative GPA: 9.52 / 10
- Valedictorian - highest GPA among graduating class.

New York University, Courant Institute of Mathematical Sciences – New York, USA (08/2013 - 05/2014)

- Bachelor's Degree in Computer Science (Visiting Student). Cumulative GPA: 3.89 / 4.0

WORK EXPERIENCE

Google – Software Engineer – London, UK (04/2016 - 08/2017)

- *Google My Business* team member. Maintained system which millions of businesses use to manage their presence on Search and Maps. Improved dashboard, customer reviews and photo management. Also worked with the Google NLP team to improve the text segmentation system for languages with clitics.

Google – Software Engineering Intern – Mountain View, USA (09/2015 - 12/2015)

- Ads Team Intern. Contributed to the design and implementation of a new data quality monitoring system, an extensible MapReduce pipeline to keep track of various metrics. The new system processed tables with several terabytes of data.

In Loco Media – Software Engineer Intern – Recife, Brazil (03/2015 - 08/2015)

- Worked on back-end and log servers for mobile advertising platforms. Also performed research and made improvements to the company's indoor positioning system, by leveraging the environment's magnetic field around the mobile device.

Great on Me – Co-founder and CTO – Recife, Brazil (02/2013 - 08/2013)

- My startup's main product was a size recommendation engine for online clothing stores. Led the implementation of the system with six other collaborators.

RESEARCH AND MENTORSHIPS

Northwestern University – Graduate Research Scientist (05/2018 - Present)

- Research Advisor: Kenneth D. Forbus, PhD.
- Worked on question-answering problems related to understanding of procedural text, challenges included dealing with complex paragraph structure and handling common sense reasoning. Also helped build a multimodal dialog based virtual kiosk that is able to answer a range of domain specific questions, while training on very few examples.

New York University – Junior Research Assistant (05/2014 - 08/2014)

- Research Advisor: Alan R. Siegel, PhD.

- Worked on the development of a system that checks the correctness of any given solution to an algorithmic problem, in terms of its underlying program logic.

Universidade Federal de Pernambuco – Mentorship program (07/2011 - 06/2015)

- *Programa de Educação Tutorial (PET)* member - a selective group of twelve preeminent students in the CS department mentored by Dr. Fernando F. Souza. Activities helped undergraduate students, the local community and promoted the CS department. Founded the inaugural state-level Olympiad in Informatics, which is now in its 4th year and involves hundreds of students.

PUBLICATIONS

Refereed Conferences and Journals

Ribeiro, D., Hinrichs, T., Crouse M., Forbus, K., Chang, M., & Witbrock M. (2019). Predicting State Changes in Procedural Text using Analogical Question Answering. *Proceedings of the Seventh Annual Conference on Advances in Cognitive Systems*. Cambridge, MA, USA.

Wilson, J., Chen, K., Crouse, M., C. Nakos, C., Ribeiro, D., Rabkina, I., Forbus, K. D. (2019). Analogical Question Answering in a Multimodal Information Kiosk. *Proceedings of the Seventh Annual Conference on Advances in Cognitive Systems*. Cambridge, MA, USA.

Refereed Workshops and Symposiums

Forbus, K., Chang, M., Ribeiro, D., Hinrichs, T., Crouse M., & Witbrock M. (2019). Step semantics: Representation for state changes in natural language. *Proceedings of the AAAI 2019 Workshop on Complex Question Answering* (pp. 52-59). Honolulu, HI, USA.

Scholar page: <https://scholar.google.com/citations?user=cSkrMRsAAAAJ>

HONORS AND AWARDS

World Finalist – ACM International Collegiate Programming Contest (ICPC) 2014 – Yekaterinburg, Russia

- North American Champion, for coming in 1st in North American Universities. Placed 13th out of 10,681 teams worldwide.

Regional Champion – ACM Regional Collegiate Programming Contest 2013 – New York, U.S.A

- Winner of Greater New York Regional Contest. Placed 1st out of 51 teams.

National Finalist – Intel Challenge 2013 – São Paulo, Brazil

- Placed 2nd in Brazilian teams. A total of 1,058 teams participated in Latin America.

Brazilian Scientific Mobility Program 2013

- Fully funded scholarship provided by the Brazilian government to study at NYU for one year.

RELEVANT SKILLS

Programming languages: Java / C++ (5 years), Python (3 years), JavaScript / Lisp (2 years), Ruby / C# / Haskell (1 year)

Frameworks & Tools: Pytorch / Tensorflow / Keras (2 years) Map-reduce (1 year)

Engineering: System design, A/B testing, internationalization, project management.

Languages: Portuguese (Native), English (Fluent), Spanish (Beginner)

GitHub page: <https://github.com/dnr2>

Personal page: https://dnr2.github.io/academic_website/