

Mag. Remo Nitschke M.S.

CV

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Education

- 2018–2023 **Linguistics PhD Program**, *University of Arizona*
Major: Syntactic Theory, **Minor:** Computational Linguistics
Dissertation Topic: Syntax and Semantics of Degree Modification in German Adjectives,
Advisor: Heidi Harley
- 2019–2021 **Human Language Technology MS Program**, *University of Arizona*
Advisor: Mike Hammond
- 2012–2018 **Teacher Training Program, Magister**, *Karl-Franzens-Universität, Graz*, *Master Equivalent (5-year program)*

Academic Experience

Jobs

- March 2021– **Research Associate**, *University of Arizona*, ToMCAT, Theory of Mind-based Cognitive Architecture for Teams (DARPA Grant: ASIST)
Within the ToMCAT project I lead a team that maintains and expands an event extraction (EE) system for finding team communication events, among other text-based NLP capabilities.
- Spring 2021 **Research Associate**, *University of Arizona*, LIVES Project
Data restoration and support
- 2019–2020 **Research Assistant**, *University of Arizona*, *Linguistics*, Prof. Noam Chomsky
Aiding in data presentations and working on an independent research project
- 2018–2020 **Teaching Assistant**, *University of Arizona*, *Linguistics*
- 2015–2016 **Research Assistant**, *University of Graz*, *Section of Theoretical English Linguistics*, *English Dep.*
Data collection for a research project on Actuality Entailments

Teaching

- Fall 2020 **LING 300**. *Introduction to Syntax*. Standalone TA
- Spring 2020 **LING 150A**. *Languages in the World (Introduction to Languages and Linguistics)*. Section instructor/GTA
- Fall 2019 **LING/PHIL 211** *Language, Mind and Brain*. TA/instructional aide
- Spring 2019 **LING/ENG 322**. *The Structure and Meaning of Words (Introduction to Morphology and Morphosyntax)*. Standalone TA
- Fall 2018 **LING 150A**. *Languages in the World (Introduction to Languages and Linguistics)*. Section instructor/GTA

Peer Reviewed Publications

- forthcoming Nitschke, R. (2022). "On the Extended Projection of German Adjectives" In: Phoebos Panagiotidis and Moreno Mitrović (Eds.), *A⁰ – The Lexical Status of Adjectives* (LFAB 17), pages 219–256. John Benjamins. <https://benjamins.com/catalog/lfab.17.07nit>
- accepted Nitschke, R., Wang Y., Chen, C., Pyarelal, A. and Sharp, R. (2022). "Rule Based Event Extraction for Artificial Social Intelligence" In: *Proceedings of Pattern-based Approaches to NLP in the Age of Deep Learning*
- published Nitschke, R. (2021). "Restoring the sister: Reconstructing a lexicon from sister languages using neural machine translation" In: *Proceedings of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas*, pages 122–130, Online. Association for Computational Linguistics

Unreviewed Proceedings and Manuscripts

- published Nitschke, R. (2020). Using Genetic Data to Make Linguistic Arguments: Are clicks evidence of late externalization?. *U. Penn Working Papers in Linguistics*, 26(1).

Conference Talks

- 2022 **Rule Based Event Extraction for Artificial Social Intelligence**, *Gyeongju, Republic of Korea*, PAN-DL at COLING 2022
- 2022 **Homesign And The Speed Of Externalization: What homesigners can tell us about the externalization of language capacity**, *Quebec, Canada*, Première Conférence Internationale sur la Biolinguistique de l'UQTR
- 2019 **Using Genetic Evidence to Make Linguistic Arguments: pitfalls and opportunities**, *UPenn, Philadelphia*, PLC 43
- 2019 **Viel Geliebt: German participial adjectives and degree words**, *University of Arizona, Tucson*, Arizona Linguistics Circle 13
- 2018 **On the Extended Projection of German Adjectives**, *Bled-Slovenia*, A0: The Adjective as a Lexical Category

Posters

- 2022 **Lessons Learned from a Secondary Analysis Using Natural Language Processing and Machine Learning from a Lifestyle Intervention**, *Baltimore, MD*, 43rd Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine, (as non-presenting co-author)
- 2021 **"Restoring the sister: Reconstructing a lexicon from sister languages using neural machine translation"**, *Online*, AmericasNLP at NAACL-HLT

Invited Talks

- 2021 **Neural Machine Translation Approaches for Vocabulary Reconstruction Tasks**, *NUI Galway, Ireland*, Cardamon Seminar Series

Publications as Editor

- Chief Editor Nitschke, Remo, Jennifer Medina, Gabriela De la Cruz-Sánchez, John W.W. Powell, Luis A. Irizarry-Figueroa, George-Michael Pescaru, Florian Hafner (eds.). (2022). *Coyote Papers 24: Proceedings of the Arizona Linguistics Circle 15*.
- Chief Editor Nitschke, Remo, Damian Y. Romero Diaz, Gabriela De La Cruz Sánchez, John W. W. Powell, Kristina Mihajlović, Luis A. Irizarry-Figueroa, George-Michael Pescaru, Florian Hafner (eds.). (2021). *Coyote Papers 23: Proceedings of the Arizona Linguistics Circle 14*

Chief Editor Nitschke, Remo, Damian Y. Romero Diaz, Gabriela De La Cruz Sánchez, John W. W. Powell (eds.). (2020). Coyote Papers 22: Proceedings of the Arizona Linguistics Circle 13

Supervision

- 2022-2023 Supervision of two graduate Research Assistants within ToMCAT
- 2022 Supervision of one undergraduate Research Assistant within ToMCAT

Service

- 2019-2022 **Abstract Reviews for Arizona Linguistics Circle (annual conference)**
- 2022 **Reviewer for GPSC travel grants**
- 2019-2022 **Coyote Papers, Editor in Chief**
- 2022 **Volunteer for ALC16**
- 2019-2021 **Mentoring for incoming graduate students**
- 2021 **Volunteer for ALC15**
- 2020 **LING Department Graduate Student Faculty Representative**
- 2020 **Volunteer for ALC14**
- 2019 **Organization committee for ALC13**
- 2019 **Volunteer for SAIL**

Industry Experience

- Summer 2022 **Research Intern, Educational Testing Services, ETS AI Labs**, Integrating SHAP functionality into RSMTOOL: AI Explainability.
I integrated SHAP functionality into RSMTOOL (RSMT). RSMT is used by ETS to evaluate machine learning models and assess them for fairness. I added components to the library that allow automatic generation of an explainability report for models generated using ETS' internal sci-kit learn wrapper, SKLL.

Programming

- Languages Python (confident), Scala (beginner), C++ (beginner)
- Libraries OpenNMT-py, pytorch, beautiful soup, pony ORM, matplotlib, sklearn, shap, pandas, numpy, transformers, *among others*

Adjacent Skills

- Github Version control with git and Github.
- SQLite Experience with SQLite databases through pony-ORM (Python).
- LaTeX Usage as a text editor, to compile slides, present data, and write templates

Languages

- German, Proficient, Native
- English, Proficient
- French, Basics
- Spanish, Basics

Current Research Projects

- German Adjectives and Degree Modification **The Syntax and Semantics of adjectival degree modification**, *Dissertation Project*, I am working on the Syntax and Semantics of degree modification in German adjectives. What is of particular interest to me is the German modifier *viel* (compare English “much”) and its selectional properties. *Viel* seems to select for events over states in verbs, nominals, and adjectives, yet it also selects for comparatives. I believe that deriving a consistent syntactic and semantic analysis of this pattern can inform on the status of adjectives generally and contribute to the discussion on Bresnan 1973’s hypothesis on English *much*.
- Language Evolution **Emergent Sign Language: CENA**, *Collaboration with: Anderson Almeida da Silva (Universidade Federal do Delta do Parnaíba), Shigeru Miyagawa (MIT and University of São Paulo), and Vitor Nóbrega (University of Hamburg)*, *CENA* is an emergent sign language in Piauí, Brasil, that arose out of a homesign system some 70 years ago (Almeida da Silva & Nevins 2020). We are working on a joint research project to show that (i) humans do not need an external model of language, but can instead devise one of their own (an argument already made by Goldin-Meadow and colleagues in their work on homesign, see for example Brentari & Goldin-Meadow 2017), and (ii) that a homesign system can quickly progress into a full-fledged sign language if there is a community that uses it. While similar arguments have been made on the case of Nicaraguan Sign Language, we argue that *CENA* is different because it was not subject to any outside influences during its genesis due to the fact that it arose in a remote village with no access to other sign languages or sign language educators.
- Event Extraction **Informative Event Extraction for Dynamic Domains**, *Collaboration with: Yuwei Wang, Chen Chen (University of Arizona)*, The team I lead within the ToMCAT project maintains a rule based event extraction (EE) system. The domain we work in consists of spontaneous speech within a game-like context. The game setting itself is subject to change with very little notice. This leads to a very dynamic domain that does not lend itself to deep learning approaches. We are looking at ways to utilize our rule-based system to fine-tune a deep learning system. We are also working on co-reference resolution in natural dialogues.