

# DAVID ROESLER

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## EDUCATION

**MS Computational Linguistics** | University of Washington (4.0 GPA) **Jun 2020 - Dec 2022**

- Project: English and Arabic sarcasm detection system
  - Developed Twitter sarcasm detection system using a bagging ensemble of fine-tuned BERTweet models
  - System outperformed SemEval 2022 Task 6 best results by 4 points F1

**MA Applied Linguistics** | Portland State University (4.0 GPA) **Sep 2017 - Jun 2020**

- Thesis: Computer Science Academic Corpus and Wordlist
  - Built 3.5-million-word academic computer science corpus and used distributional statistics to derive an academic wordlist for English-for-specific purpose educators and material developers
  - Results published in peer-reviewed *Journal of English for Academic Purposes*

**Intensive Mandarin Training Program** | National Taiwan Normal University **Sep 2005 - Aug 2006**

**Bachelor of Fine Arts** | University of Wisconsin - Milwaukee **Sep 1998 - May 2003**

**Coursework:** Deep Learning for NLP / Advanced Statistical Methods for NLP / Shallow Processing Techniques for NLP / Deep Processing Techniques for NLP / Programming / Data Structures / Multivariate Calculus / Probability & Statistics / Syntax / Corpus Linguistics / Discourse Analysis / Sociolinguistics / Research Design

**Certifications:** Coursera: Deep Neural Networks with Pytorch / Convolutional Neural Networks in TensorFlow / NLP in TensorFlow / Sequences, Time Series and Prediction / Custom Models, Layers, and Loss Functions with TensorFlow / Custom and Distributed Training with TensorFlow / Advanced Computer Vision with TensorFlow / Generative Deep Learning with TensorFlow / SQL for Data Science / Udemy: Spark and Python for Big Data

**Skills:** Python / C++ / Java / Pytorch / TensorFlow / Keras / Numpy / Scikit-learn / Pandas / NLTK / Gensim / Jupyter / Conda / Linux / SPSS / SQL / Spark / AWS / English - Native / Mandarin – Advanced

## RESEARCH

- [under review] Roesler, D., Johnny, S., Conway, M., Chen, A. (2023). A Stigma Theory-Informed Deep Learning Approach to Extracting and Characterizing Stigma Content from Social Media. *BMC Digital Health*
- Roesler, D. (2021). When a bug is not a bug: An introduction to the Computer Science Academic Vocabulary List, *Journal of English for Academic Purposes*, 101044. <https://doi.org/10.1016/j.jeap.2021.101044>
- Roesler, D. (2020). *A computer science academic vocabulary list* [Master's thesis, Portland State University]. <https://doi.org/10.15760/etd.7414>

## EXPERIENCE

**Machine Learning Research Assistant** | University of Washington School of Medicine | Seattle, WA **Jan 2022 - Present**

- Developed a substance use stigma detection system for social media data as part of an NIH-funded research project, outperforming a RoBERTa baseline by 6.45 F1 and resulting in a more accurate and efficient system.
- Designed and implemented a data pipeline, trained and deployed detection models, and improved annotation quality, resulting in a streamlined and effective workflow for the research project.

**Software Engineer** | WordLeap LLC | Atlanta, GA | [www.wordleap.co](https://www.wordleap.co) **Apr 2021 - Dec 2021**

- Collaborated with lead software engineer to revise the WordLeap machine translation pipeline, resulting in improved quality of in-app translations.
- Developed systems that personalize the vocabulary study experience of WordLeap users, resulting in a 20% increase in user engagement.

**Civil Engineering Department Teaching Assistant** | Portland State University | Portland, OR **Sep 2019 - Jun 2020**

- Created writing workshops for Civil Engineering students in order to develop discipline-specific language skills
- Designed tests, providing evaluation and feedback on student writing

**ESL Course Instructor** | Pacific International Academy | Portland, OR **Jul 2018 - May 2019**

- Designed, prepared and delivered student-centered task-based ESL lessons for university-bound students
- Worked with students and faculty to meet a set of learning objectives in an intensive ESL program

**Language Trainer** | Cartus – Corporate Relocation Services | Portland, OR **Oct 2017 - May 2018**

- Provided adult students with ESL lessons that are customized to students' individual needs
- Selected ability-appropriate materials and designed customized lesson plans

**Head ESL Instructor** | Hess International Educational Group | Taipei, Taiwan **Sep 2003 - Sep 2017**

- Designed, prepared and delivered ESL lessons and specialized speech and writing courses to K-12 and university students, resulting in a 25% increase in students passing the TOEFL exam.