Ryan Nelson

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Linguist | ML Engineer

Formal linguist and data engineer
turning toward NLP and machine learning

Education

Master of Science (expected 2026)
University of Arizona
Human Language Technology

Master of Arts
University of Arizona
Linguistics

Bachelor of Arts
University of Arizona
Linguistics and French

Certificate

Natural Language Processing
University of Arizona

Publication

"A principled account of Malagasy deverbal nouns" presented at The 29th West Coast Conference on Formal Linguistics: University of Arizona. April 22, 2011.

Published in Proceedings of the 29th West Coast Conference on Formal Linguistics, ed. Jaehoon Choi et al., 196-204. Somerville, MA: Cascadilla Proceedings Project, 2012.

Work Experience

Topic Modeling Intern
BERTopic · HDBSCAN · UMAP · SpaCy · mlflow

2026–current **Davis Selected Advisers**

Built a temporal topic model representing topic prominence over time.

The model is built with BERTopic and changes in topic prominence represented via a log-odds comparison for each topic relative to its own baseline, represented visuallyin a visual heat map.

Database Administrator
PowerShell · SQL

2022–2024 **Davis Selected Advisers**

Analyzed and enhanced existing procedures and scripts for robustness, flexibility, and adaptability.

Established and maintained a centralized PowerShell library of functions and classes for Davis-internal scripts.

Contract Analyst, Various
Python · R · dplyr · Javascript

2020–2022 **Intuit Inc | Celestica Inc | Fiji Water**

Deployed automated scripting to streamline reporting and data pipelines across diverse supply chain and operations environments.

Financial Data Analyst
VBA · SQL · R · dplyr

2016–2020 **CyraCom International**

Introduced programmatic procedures, filling reporting gaps while bolstering reliability, accuracy, and efficiency.

Owned analysis and reporting of financial and operational business metrics, interpreting data into actionable insights.

Other Projects

tagger
Python · Keras · TensorFlow · Weights & Biases

Trains a bigram-convolutional neural network over SpaCy embeddings to predict emotion labels on Reddit comments.

The network design was motivated through evaluation of various models and systematic hyperparameter optimization.

convector
Python · Gensim

Applies distributional semantics and semantic matching toward an automated solver for the New York Times Games Connections puzzle.

Trains CBOW embeddings on Wikipedia and clusters the context vectors via DBSCAN to identify distinct meanings before grouping different words' senses by cosine similarity.

asofterworld
Python · OpenCV · BeautifulSoup

Bridges syntactic theory and NLP to explore whether panel divisions in the webcomic A Softer World separate syntactic consituents.

It scrapes the webcomic's images then detects and partitions panels, assigning OCR-extracted text according to panel boundaries, and passes that text to an NLP pipeline.