David L. Nielsen

208-310-0902 **david.nielsen88@gmail.com**

Education

University of Washington, Seattle, Washington — Sept 2017 - Dec 2020

- M.S., Computational Linguistics, GPA 3.96
- Completed natural language processing projects on text summarization, named entity recognition and classification, and hate-speech detection.
- Built state-of-the-art neural machine learning models such as transformers with transfer learning, as well as foundational models, e.g., conditional random fields.

Reed College, Portland, Oregon — Aug 2008 - May 2011

- B.A., Mathematics, GPA 3.48
- Senior thesis: *The Problem of Zarankiewicz* Discovered and proved a new lower bound for certain cases of this problem.

Work Experience

NASA Aeronautics Research Institute, **NASA Ames Research Center**, remote

Senior Research Engineer, **KBR** — April 2022 - present

- Leading research projects digitizing information contained in Federal Aviation Administration documents and audio recordings.
- Investigating the utility of large language models (LLMs) to perform automated speech recognition, named entity recognition and text classification.
- Research on fine-tuning of LLMs published in AIAA AVIATION Forum 2024 and IEEE Digital Avionics Systems Conferences 2024.

Tura.io, Portland, Oregon

Data Engineer & Scientist — Sept 2017 - March 2022

- Consulted as Data Scientist for Intertek. Delivered machine learning pipeline with optical character recognition and entity classification to extract structured data from unstructured PDF reports.
- Consulted as Principal – Data Engineering & Data Science for **CoreLogic**. Lead a team developing cutting-edge machine learning frameworks to implement predictive modeling tailored to real estate pricing.
- Developed extensive training materials for building data engineering pipelines on the Google Cloud Platform.

Intelligent Systems Division, NASA Ames Research Center, California

Research Engineer, **MORi Associates, Inc.** — Feb 2013 - Oct 2016

- Collaborated with the Data Sciences group to research aviation safety incidents using data mining and machine learning techniques.
- Designed novel anomaly detection algorithms to discover and investigate landings at four of the largest US airports. These algorithms improved state-of-the-art machine learning techniques, and the results were published in IEEE Digital Avionics Systems Conferences and 2016 World Congress on Computational Intelligence.

Technical Skills

- Extensive use of the Python Machine Learning ecosystem (Pandas, Pyspark, NLTK, Pytorch, Huggingface, LangGraph, etc.)
- Built containers using Docker and Kubernetes locally and on the cloud.
- Developed on Google Cloud Platform using the CLIs and SDKS for GCS, BigQuery, Cloud Functions, Pub/Sub, Composer, Dataproc, etc.