

# Lora Johns

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*Computational linguist and natural language understanding research engineer.*

*I bring years of insight from linguistics and information science to my work and research in natural language understanding and information retrieval.*

## Skills

Languages	Python, C, C++, Cython, Go, Rust, SQL, $\LaTeX$
Libraries	PyTorch, Tensorflow, Keras, scikit-learn, numpy, pandas, scipy, CUDA
Expertise	language modeling, information retrieval, CNNs, RNNs, LSTMs, Transformers
Development	Linux, bash, Google Cloud, Kubernetes, Docker, Flask, REST APIs
Research	Visual question-answering, logical inference, entity linking, natural language-to- {code, math, image} translation

## Experience

- 2019 **Computational Linguist/NLU Research Engineer**, *NLMatics*, New York.  
Natural language understanding researcher and full-stack developer innovating machine learning and artificial intelligence models to extract semantic and syntactic structures from raw legal and financial documents.
- Use algorithms from classic natural language processing, graph theory, Bayesian probabilistic inference, bioinformatics, active learning, reinforcement learning and deep learning to create scalable and robust enterprise software.
  - Work with research training datasets such as GLUE and create self labeled datasets from publicly available corpora.
  - Curate datasets for natural language understanding tasks including entailment, constituency parsing, and paraphrasing. detection.
  - Fine tune deep learning models for inference, question answering, and information retrieval.
  - Lead efforts in legal artificial intelligence including customer requirement understanding and design of models and algorithms.
  - Engineer data pipelining and model serving software.

2019 **Python Machine Learning Consultant**, *Tolstoy.ai*, New York | S.F..

Consultant for major academic law library on entity recognition, coreference resolution, and tagging engine on Nuremberg Trials corpora built in Python.

- Tested and validated model in Python, achieving > 97.5% accuracy and precision
- Identified reasons for overfitting in the dataset missed by other data scientists due to domain knowledge

2019 **Machine Learning Software Engineer**, *Independent*, New York.

Consulting work, collaborations, and personal projects in Python, C, C++, Cython, R, Go, JavaScript, SQL.

- Built a scheduling app for PyData NYC conference-goers the Sunday before the event with the Google Cloud API and Python
- Learned Go and webpack in 3 days to migrate a legacy portfolio website from Gatsby.js in React to Hugo
- Wrote bash scripts and Makefiles to synchronize bash/zsh profiles and installations of pyenv, pyenv-virtualenv, Docker, and VS Code to facilitate reproducible data-driven programming collaborations
- Wrote custom Homebrew taps for Python and pyenv with C and ruby to enable MacOS use of latest Python Tk Interface
- Public outreach for tech education including blogging, teaching, and speaking.

2017–2019 **Faculty Services Librarian**, *Yale Law School*, New Haven.

Research and technology integration in legal data

- Piloted and implemented ticketing software to integrate the libraries' departments into the same workflow for managing patron requests and complaints.
- Co-piloted a digital preservation ingestion software beta test for rare, old, and degrading documents
- Executed a large-scale data gathering, analyzing, and synthesizing project of faculty scholarship data spanning half a decade to support Yale Law School reaccreditation.
- Solved issues of research marrying data management, organization, retrieval, and warehousing in legacy formats and modern APIs for large-scale government and legal data projects.
- Co-developed subject schema for U.N. Global Online Access to Legal Information.

2012–2017 **Federal Law Clerk and Litigator**, *U.S. Courts of Appeals, Paul Weiss, &c*, New Haven | N.Y.C. | D.C..

Federal litigator specializing in large-scale patent, financial, white-collar, international business, and intellectual property disputes

- Persuaded the Federal Circuit to change the law to allow aggregate lawsuits (class actions) in the Court of Appeals for Veterans Claims (brief cited in the *Wall Street Journal*).
- Supported former chief Judge Ralph K. Winter, Jr. in all chambers operations and docket of federal appeals, including writing persuasive briefs and motions to help decide the outcomes of cases.
- Defended software patents for Yahoo! in patent troll litigation, requiring translation from highly technical specifications to language the non-specialist courts could understand.
- Collected, cleaned, and analyzed data from the Department of Veterans Affairs to prove statistical likelihood that veterans' illness was due to exposure to Agent Orange, influencing Connecticut Senator Chris Murphy to successfully introduce a bill in Congress to increase their disability benefits.

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## Education

- 2020 **Professional Certificate**, *Stanford Engineering*, .  
Natural Language Processing with Deep Learning
- 2019 **Certificate**, *Flatiron School*, .  
Data Science
- 2018 **M.L.I.S.**, *Simmons College*, .  
Library and Information Science
- 2014 **J.D.**, *Yale Law School*, .
- 2009 **B.A.**, *Dartmouth College*, .  
Linguistics

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## Professional Activities

- 2020 AAI Presenter, Thirty-Fourth AAI Conference on Artificial Intelligence
- 2020 PyCon Hatchery Organizer, Accepted Proposal, PyCon 2020
- 2019 Correlation One DS4A Summit Presenter 2019
- 2019 PyData Diversity Scholar
- 2019 *Towards Data Science* Featured Contributor on Medium
- 2019-2020 PyCon 2020 Program Committee
- 2019-Present Data Science Ontology project
- 2019-Present GitGraph library maintainer (JavaScript)

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## Languages

German	Reading, Writing, Speaking	B2-C1
Spanish	Reading, Writing, Speaking	B2-C1
French	Speaking	A1-A2
Czech	Reading, Speaking	A2
Mandarin	Writing (Traditional), Speaking	A2
Japanese	Writing, Speaking	A2