

Alex Schumacher

Curriculum Vitae



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WORK EXPERIENCE

CURRENT, FROM JUNE 2018

Claira *Founder and Head of Data Science*

I lead a team of computational linguists, data scientists and legal annotators to produce purpose-built solutions for financial institutions who need to pull insights from their active and legacy agreements. I also drive product direction from insights gleaned from interactions clients about their needs, and I liaise with software engineering to bring together the work of the development team with the client-facing UI/APIs.

As a co-founder, I have been involved in business development including promotion, fundraising, presenting of Claira's progress to stakeholders, and driving firm-wide strategy to bring Claira's technology to the most market-ready areas. I also make decisions on, interact with, and evaluate vendors both for the data science team and more broadly.

Through my technical skills (knowledge of formal syntax and semantics and programming), I am an essential contributor to research and development of Claira's proprietary NLU technology. My duties also include ML model training and deployment, writing data pipelines to Claira's front-end, conceptualization and establishment of data annotation standards and practices, and data collection.

APRIL 2018 – JUNE 2019

ModelOp *formerly Open Data Group* *Data Scientist*

I worked in a consulting role, supporting NLP projects for clients. I wrote models for sentiment analysis of FOMC meetings, cryptocurrency buzz, and SEC filings. I also did time series modeling in a project on the monitoring of the time-dependent performance of certain industrial system as well as an analysis of ambient temperature variation that might predict part failure of industrial equipment. This role led directly to the founding of Claira.

JANUARY 2016 – MARCH 2018

University of Oxford, Oxford e-Research Centre *Academic Visitor*

Conceived of and implemented original mathematical models of psycholinguistic cognition. I implemented and critically evaluated existing computational models of psycholinguistic cognition on experimental data and contrasted those models against my original models.

While I was at the OERC, I conducted corpus studies in support of psycholinguistic research for the development of a new classification of English argument structure, and for the development of a noisy channel model for use in effective textual criticism of Classical and Koine Greek manuscripts.

EDUCATION

- 2018 **Doctor of Philosophy**
CHAIR: JANET PIERREHUMBERT
Linguistics
Northwestern University
- 2011 **Bachelor of Arts**
CUM LAUDE
Linguistics, Classical Languages
University of Iowa

AWARDS

- 2011 *Phi Beta Kappa*

PROGRAMMING SKILLS

- PYTHON (MODELING) spaCy, scikit-learn, gensim
torch, coreNLP, allennlp
scipy, pymc3
- PYTHON (TOOLS) pyspark, pandas, numpy
nlTK, seaborn, pydantic
bs4, rdflib, pytest
- R tidyverse, dplyr, glmnet, caret
tscount, ggplot2, lubridate
lattice, lme4
- OTHER TECHNOLOGIES docker, git, aws, SQL, django
jupyter, ActionScript, LaTeX

TECHNIQUES

- NLP semantic parsing, text classification,
information extraction, topic modeling
inference, slot filling, slot filling
text summarization, ontologies, tagging
tokenization, sentiment analysis
- MODELING CRF, GARCH, ARIMA, GLMER
simulated annealing, PCA, k-means
MCMC, random forest, OLS
- DEVELOPMENT testing, SCRUM, CI/CD

PERSONAL

In my spare time I enjoy college football, reading, baking, and a number of side coding/NLP projects which I put on my github from time to time. I'm always willing to talk Big Ten football or classical textual criticism with anybody whenever.