

# 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.