Kyle A. Chezik

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Skills

Languages	Python, R, SQL, Unix/Linux, Git, Regex, Stan
Machine Learning	Supervised, unsupervised & deep learning, hierarchical & generalized linear regression, time series modeling & forecasting, tree models, simulation, classification, feature engineering & selection
Statistics	A/B Testing, probability, likelihood, inference
Tools	Jupyter, Pandas, NumPy, Scikit-learn, R-Studio, Tidyverse, Caret, LME4, RStan, *web-dev*: HTML, CSS, AWS, Flask, *data-vis*: GGPlot2, Matplotlib, Seaborn, R-Shiny

Experience

2019-Present **Sr. Data Scientist**, Starbucks Coffee Co., Seattle WA, USA

- Built a Bayesian state space **particle filter** model in **python** to estimate standing inventory quantities for over 100 items within Starbucks retail stores throughout North America.
- Benchmarked, tested and deployed code to a production platform; improving the **unsupervised** particle filter algorithm in an iterative, rapid and safe process.
- Improved particle filter production processessing speeds by 50% leading to reduced compute costs and new opportuntities for model development within daily time constraints.

2019 **Data Science Consultant**, Seattle WA, USA

- Built a stochastic consumption **Bayesian structural time series** model in **pyStan** to predict stock-out for Bottomless, a Y-Combinator backed company providing precise coffee re-supply.
- Incorporated an **Economic Order Quantity model** to dynamically estimate re-order points that limit over-stock and stock-out risk in an uncertain delivery environment.
- Developed a data cleaning algorithm that combined probabilistic and logical processes, establishing the ground work for full automation.

2019 **Insight Data Science Fellow**, Seattle WA, USA

- Developed an **interactive recommender** using **deep learning**, **computer vision** and cosine similarity to help gardeners find native plants that meet their aesthetic tastes.
- Scraped and decomposed **1400**$^{+}$ plant images into 512 features using the **convolutional neural network** ResNet18 in **PyTorch**, and combined meta-data from multiple databases.

2013-19 **Research Assistant**, Simon Fraser University, Burnaby BC, Canada

- Automated error identification in time series data using a **Bayesian Hidden Markov model** with 84% accuracy across **1 Million**$^{+}$ records. Significantly reduced human work hours, and earned the SFU KEY Big Data Graduate Scholarship.
- Identified novel river-network properties using **linear regression**, **simulations**, **ARIMA** processes and **parametric bootstrapping**. Achieved 98% certainty.
- Used **periodic time series** and **generalized hierarchical spatial network models** to determine stream temperature drivers and assess salmon heat risk.
- **Feature engineering** for gridded data with **GIS** (e.g.,*GDAL, OSGEO*) and **parallel computing** within Python (*WhiteboxGAT*) and on the command line (*GNU parallel*).

Education

2019 **Ph.D.** Biological Sciences, Simon Fraser University, Burnaby BC, Canada

2013 **M.Sc.** Conservation Biology, University of Minnesota, St. Paul MN, USA

2009 **B.A.** Biology, St. Olaf College, Northfield MN, USA