

# Kyle A. Chezik

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## Technical skills

Tools    Python, R, Unix, Stan, Git, SQL, ArcGIS, GDAL, OSGEO, LaTeX, HTML, CSS, Regex, Flask  
ML        *Classification/Clustering*    Random Forest, Convolutional Neural Networks, K-means, PCA & Naive Bayes  
Stats    *Regression*    Hierarchical & Simple... Logistic, Linear/Nonlinear, Lasso & Ridge  
          *Time Series*    ARIMA, Bayesian Structural & Hidden Markov Models  
          *Smoothing*    LOESS & Generalized Additive Models (GAM)

## Professional experience

- 2019    *Insight Data Science Fellow*, Seattle WA, USA
- Developed an **interactive recommender tool** that provides conservation minded gardeners with local native plant alternatives possessing similar aesthetic quality to desirable non-native species.
  - Scraped **>1400** web images and native plant information held in the USDA and Lady Bird Johnson Wildflower Center databases using **BeautifulSoup in Python**.
  - Decomposed each image into **512 features** using the **convolutional neural network ResNet18** within the PyTorch framework and compared images using cosine similarity.
  - Deployed the tool as a web app on AWS using Flask.
- 2013-19    *Graduate Research Assistant*, Simon Fraser University, Burnaby BC, Canada
- *State Space Modelling*: Automatically identified erroneous stream temperature records by building a novel **unsupervised Hidden Markov model** in R and Stan.
  - Demonstrated an error identification **accuracy of 84%** across >1 million records.
  - *Spatial-Network Analysis*: Advanced a spatio-temporal river network model using R and Stan.
  - Improved the Canadian Department of Fisheries and Ocean's (DFO) ability to assess heat risk during salmon migration thereby **reducing** regulatory **uncertainty** of a multi-million dollar fishery.
- 2016    *Data Engineer Contractor*, ESSA Technologies Ltd., Vancouver BC, Canada
- Assembled, organized and quality controlled a stream temperature database for the province of British Columbia containing nearly **4 million records**.
  - Built and packaged functions in R for end-to-end reproducibility and continued maintenance.
  - Organized the temperature database into relational tables that were transferred to MS Access for a familiar UI experience.
  - Supported the development of a province wide river-network temperature model through **feature engineering** of flow, temperature and landscape data.
- 2009-11    *Associate Medical Device Reporting Specialist (MDR)*, Medtronic Inc. Mounds View MN, USA
- Optimized medical trial data accuracy through direct interaction and verification with principle investigators at multiple hospitals.
  - Systematically recorded and reported medical device failures to the FDA to improve detection of device related negative health outcomes.

## 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