Lee Goerl, PhD

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Post-Secondary Education

PhD: Kansas State University, Mathematics (December 9, 2016)

Professional Training: The Data Incubator, Data Science (November 11, 2016)

Relevant Skills

Primary Languages and Frameworks: Python, Git, Numpy, Scipy, Pandas, Flask

Secondary Languages and Frameworks: R, SAS, SQL, PostgreSQL, Hadoop, PySpark, AngularJS

Data Science and Analytics Experience

- **QuasiCoherent Labs:** Co-founded in 2015 to offer consulting on data products to non-profit organizations. I have consulted with clients to design and spec projects to their needs. Discussed aspects of processes to be modeled, data, and collection with their domain experts. *experimental design, A/B-testing, time series modeling, dynamic systems modeling*
- **The Data Incubator:** utilized *Python, Pandas, SciPy, NumPy, Hadoop, MapReduce, Spark, SQL, Scikit learn, and Bash.* **Capstone:** Scraped & cleaned 2016 presidential candidate speeches and classified them by narrative type; clustered on tf-idf vectors, executed PCA on extracted setiment time series for each transcript to aid with interpretation.
- **Statistical Consulting Lab - KSU:** Consulted on the statistical aspects of research for other graduate students at KSU in Grain Science, Animal Science, Biology for the Statistical Consulting Lab. *experimental design, ANOVA, MANOVA, survey analysis*
- **Development of a Strava based app:** Scraped Strava's website for user created cycling and running routes to implement a usable search feature. Setup a remote database for the scraped data. Deployed to Heroku an API driven front-end to interface user-based queries to find routes near a specified location. *Amazon RDS, PostgreSQL, Heroku, Flask, RESTFUL API, AngularJS*
- **Powerhouse SunRun 2017 hackathon entry:** Worked with industry experts to write optimization software to control charging and discharging of a battery array, optimizing both battery life vs. buy/sell grid cost for Time of Use rate plans. Responsible for data engineering, algorithm development, testing, and component integration. *Pandas, Pytest, Docker*

Research Experience

- *Sheaves of differential operators and D-modules over non-commutative projective spaces* in non-commutative algebraic geometry and representation theory (PhD dissertation).
- Presented poster on research with Bryan Bischof at MSJ-SI Osaka, International Conference on *Schubert Calculus*: *Deformations of differential operators on the big cell.*
- Organized and participated in special research seminar for Algebraic Geometry. Gave more than thirty seminar talks at KSU in the Representation Theory Seminar.

Teaching Experience

- Taught fourteen semesters for Kansas State University's mathematics department, including College Algebra, General Calculus, Calculus I, II, and Matrix Theory studio.
- Coordinated Teaching of courses for other instructors, including development of course material, coordinated grading with undergrad graders, coordinated help sessions, in summers of 2010-2014
- Taught Introductory statistics in the Statistics department in 2007-2009