Sarah Jane Schmidt

Ex-astronomer looking to create data-driven solutions to problems on Earth.

SKILLS

Technical

- **Programming:**
  - Python (proficient)
  - SQL/postgres (proficient)
  - IDL (expert)
- **Tools**:
  - Git/github (familiar)
  - Excel/spreadsheets (proficient)
  - Command line (proficient)
- **Analysis:**
  - Data cleaning (proficient)
  - Data visualization (expert)
  - Statistical reasoning (proficient)
  - Hypothesis testing (familiar)
- **Modelling:**
  - Classification (proficient)
  - Dimensionality reduction (proficient)
  - Regression analysis (expert)
  - Chi-squared minimization (expert)

Communication

- **Written:** Authored more than 60 papers.
- **Presentation:** Delivered over 30 seminars to both specialist and general audiences.
- **Teaching:** Designed and gave lectures and coursework for 3 university courses.
- **Workshops:** Led workshops on data visualization, inclusive mentoring, and vocal technique.

Leadership

- **Mentoring:** Supervised ten students through data-focused research projects.
- **Team Lead:** Weekly research team meetings.
- **Committee Lead:** Chaired the executive level inclusion committee for SDSS, a 2,000 member international collaboration.
- **Collective:** Practiced non-hierarchical leadership within choir and feminist activist spaces.

EXPERIENCE

Research Fellow

Leibniz Institute for Astrophysics, Potsdam
September 2015 - September 2020

- Led a four person team that used machine-learning techniques (e.g., k-nearest neighbor, gaussian processes) on large datasets to predict the ages of stars.
- Designed and analyzed a survey to quantify gender-bias in how audiences question conference presenters and used the results to train moderators in best practices.

Research Fellow

The Ohio State University, Columbus
September 2012 - August 2015

- Pioneered a new method to model sparse time-series data of stellar magnetic outbursts using chi-squared minimization.
- Verified the results of a large, collaborative data analysis pipeline for ten thousand stars.
- Used regression analysis to calibrate trends between the chemical composition of a star and its observed color.

Research Assistant

University of Washington, Seattle
September 2006 - August 2012

- Extracted and cross-matched data for twelve thousand stars from five different databases to identify trends in the evolution of stellar magnetic fields.
- Wrote custom IDL code to process thousands of multi-dimensional data files to measure the temperature of magnetic stellar outbursts.
- Analyzed a dataset of grades for 100,000 students to measure the mean increase in performance caused by a mentoring program targeted at a diverse group of students.

EDUCATION

PhD in Astronomy

University of Washington
August 2012, Seattle

BA in Astronomy & Physics

Barnard College
June 2006, New York City

LANGUAGES

- **English** (native)
- **German** (A2)

WORKSHOPS

Data Scientist in Python Path
Dataquest, February 2021 - present

Interactive online course with a broad, data-focused curriculum.

Machine Learning for Astronomers
September 2020

Introduction to supervised and unsupervised learning techniques.

Astro Hack Week
August 2019

Included tutorials on pytorch, keras, tensorflow, and visualization.