Amelia Taylor

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Experience:

- **Fellow**, *Insight Data Science*, Bend, OR — June 2016 - Present
  - Completed 3-week consulting project providing actionable insights and deliverables beyond those requested.
  - Implemented Synthetic Minority Over-sampling Technique in the context of score updating in Python.
  - Implemented gradient descent in Python for updating scores using new supervised data.
- **Instructor**, *Oregon State University - Cascades*, Bend, OR — September 2015 - June 2016
  - Developed a statistically powerful method for inferring phylogenetic trees using representation theory. Implemented algorithm for inference and simulation data tests in R.
  - Oversaw all aspects of mathematics and statistics academic programs.
- **Associate Professor** (tenured), *Colorado College*, Colorado Springs, CO — July 2012 - May 2016
  - Converted Statistical Modeling and Probability Theory course to being taught using R.
  - Supervised 11 full time faculty, 7 part time faculty and 2 staff.
  - Coordinated all daily operations of the department, including two major personnel reviews, an external review of the department, course scheduling, weekly speaker series and budgeting process.
- **Assistant Professor** (tenure-track), *Colorado College*, Colorado Springs, CO — August 2006 - July 2012
  - Developed and published an algorithm for computing a monomial ideal invariant using reverse search.
  - Developed a package for working with graphs in Macaulay2.
  - Organized 6 intense week-long workshops of 25+ people.
  - Coordinated department assessment team for two years. Developed outcomes, rubrics and feedback loops.
- **Assistant Professor** (tenure-track), *St. Olaf College*, Northfield, MN — August 2003 - July 2006
  - Wrote and implemented algorithms for computing key algebraic structure in commutative algebra.
  - Taught Introduction to Computer Science and Probability Theory and a broad range of other mathematics courses.
- **VIGRE Hill Assistant Professor** (postdoctoral fellow), *Rutgers University*, Piscataway, NJ — 2000-2003
  - Developed a Monte Carlo based method for fast computation of a key invariant in commutative algebra.
  - Implemented a recently published algorithm for computing integral closure in Macaulay2.

Independent Data Science Projects:

- Developed a K-nearest neighbors algorithm in R for predicting shelter animal results using Kaggle dataset. — April 2016
- Statistical analysis in R of error rates and audit needs for judging signatures for mail-in ballots for the El Paso County, CO elections office. — Fall, 2015

Skills:

- **Languages:** Python, R, Mathematica, Macaulay2, SQL*, Minitab*, Matlab*, Maple* — *some experience
- **Tools:** pandas, NumPy, SciPy, scikit-learn, Matplotlib, jupyter, git, LaTeX

Education:

- **Ph.D., Mathematics**, *University of Kansas*, Lawrence, KS — May 2000
- **M.S., Mathematics**, *Purdue University*, West Lafayette, IN — May 1997
- **B.A., Mathematics**, *St. Olaf College*, Northfield, MN — May 1994
  Magna Cum Laude, with Distinction