Andrew B. Maurer

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Skills

- **Programming:** *Deep Learning Frameworks:* PyTorch, Fast.AI. *Statistical Programming:* R, SciPy Stack (Pandas, Scikit-Learn, Matplotlib, iPython). *General Programming:* Python, Java. *Databases:* SQL. *Mathematical Programming:* Sage, GP/Pari.
- **Software:** *Operating Systems:* GNU/Linux, Windows, Mac OS. *Scripting:* Bash, Python. *Version control:* Git. *Document preparation:* LaTeX, org-mode, HTML, markdown.
- **Mathematics:** *Pure Math:* linear algebra, calculus, real analysis, abstract algebra, complex analysis, algebraic number theory, representation theory, homological algebra. *Computer Science:* data structures & algorithms, formal language theory, theory of computation. *Statistics:* statistical regression, nonparametric data analysis. *Machine Learning:* deep learning, supervised learning, unsupervised learning, classification, regression.
- **General:** Public speaking, mathematics education, college teaching, workshop facilitation.

Education

- **Mathematics, Ph.D.** — Athens, GA
  University of Georgia — 2019
- **Mathematics, B.S.**, Computer Science, Minor. — Amherst, MA
  University of Massachusetts — 2014

Professional Training

- **Insight Data Science** — Seattle, WA, 2019
  Post-Ph.D. fellowship focused on producing projects and preparing for a career in data science. Conceived of, designed, and built web-app *Data-Driven* (see *Data Science Projects* below).

Data Science Projects

- **Data-Driven** (*Insight Data Science Project*): Predicts safe times and locations for new drivers to practice and learn in progressively more difficult conditions.
  - Cleaned and organized data from over 200K traffic collisions in Seattle between 2004 and 2019.
  - Generated visualizations using Geographic Information Systems (GIS).
  - Modeled using one-class support vector machines and kernel density estimation.
  - Deployed interactive web-app using Flask and AWS.

Experience

- **Research:** Single-author publication in *Proceedings of the American Mathematical Society*. Extensive research in algebra and representation theory. REU on asymptotic problems in coding theory, graph theory, and number theory. Numerous invited talks.
- **Organizer:**
  – Co-organizer of Southeast Lie Theory Workshop (2018, ∼35 talks, ∼150 domestic and international participants).
  – Co-organizer of Graduate Student Summer Program & Conference (2018, 6 workshops, ∼40 talks),
  – Co-founder / co-organizer of weekly *S.M.A.R.T.S.* seminar (2017–18, ∼25 participants),
  – President of UGA's *Chapter of the American Mathematical Society* (2015–17, ∼50 members),
- **Teaching:** *Instructor of record:* Calculus, Pre-Calculus, Mathematics of Decision Making, Upward Bound SAT Math. *Teaching Assistant:* Linear Algebra, Introduction to Proofs, Differential Calculus, Integral Calculus, Foundations of Geometry, Abstract Algebra.
- **Selected Presentations:**
  – *Finite Generation of Relative Cohomology for Lie Superalgebras* (Texas A&M Algebra Seminar, audience: research specialists),
  – *Statistics For Mathematicians* (S.M.A.R.T.S. Seminar, audience: math graduate students),
  – *Coloring Graphs on Surfaces* (Week-long Math Camp, audience: high school students).