Trevor Olsen

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WORK HISTORY

- **University of South Carolina**, Columbia, SC, Graduate Assistant, (08/2016 to 12/2021)
  Instructed or graded for 18 courses and conducted research. Earned an average evaluation score of 4.75/5
- **Partners for Minorities in Engineering and CS,** Columbia, SC, Workshop Leader, (06/19 and 06/20)
  Organized and led curriculum which inspired >85% of the students to further investigate STEM career options
- **Miami Dade College**, Miami, FL, Adjunct Faculty, (05/2015 to 08/2016)
  Taught classes including Financial Mathematics and Calculus. Helped students get into top 10 universities
- **University of Miami**, Coral Gables, FL, Tutor, (08/2014 to 05/2015)
  Guided struggling athletes in math courses, improved test scores by as much as 40%

PROJECTS

- **NCAA March Madness Bracket Predictor:**
  - Assembled 20 years of data with web scraping before pre-processing using Pandas
  - Visualized data using >5 plots generated by Matplotlib, Seaborn, and Plotly
  - Predicted the correct winner of each game 75% of the time using predictive models (ex. Logistic Regression)
- **Wordle Analysis:**
  - Programmed Wordle in Python and iterated through tens of thousands of initial guess tuples to form a data driven starting strategy
  - Leveraged data analytics and differing metrics to evaluate each starting strategy depending on an individual's personal preferences. Quickly reduced the remaining possible answers to less than 10 words
- **CS Dissertation:**
  - Developed more than 10 intelligent sampling methods which revamped existing results and solved novel problems in the domain
  - Implemented in C++ with additional Python and Shell scripts to automate over 5000 simulations
  - Reduced the time to generate a solution by 90% compared to the best-known existing algorithm
- **Math Dissertation:**
  - Analyzed over a billion graph isomorphism classes, organized classes by maximized attributes and generalized structures
  - Created in Python (SageMath), resulted in 3 written publications and 2 articles in preparation

EDUCATION

- **Ph.D. in Computer Science** (2021), University of South Carolina, Columbia, SC (GPA: 3.8/4)
- **PhD in Mathematics** (2020), University of South Carolina, Columbia, SC (GPA: 3.6/4)
- **M.S. in Computer Science** (2020), University of South Carolina, Columbia, SC (GPA: 3.8/4)
- **M.A. in Mathematics** (2015), University of Miami, Coral Gables, FL (GPA: 3.3/4)
- **B.S. in Math and CS** (2013), Palm Beach Atlantic University, West Palm Beach, FL (GPA: 3.4/4)
- **A.A. in Liberal Arts** (2011), Inver Hills Community College, Inver Grove Heights, MN (GPA: 3.0/4)

SKILLS & STRENGTHS

- **Programming Experience** – Python (Jupyter Notebook, Scikit-learn, Matplotlib, Seaborn, Plotly, Pandas, Numpy, SageMath, XGBoost), SQL (MySQL, PostgreSQL), Latex, C++, Visual Basic .NET, Java, HTML, Shell, R
- **Operating Systems** – Linux (Ubuntu), Windows, Mac OS
- **Theory** – Graph theory, combinatorics, probability, statistics, robotics, path planning, algorithms, computational mathematics, machine learning, predictive modeling, data science, abstract and linear algebra
- **Additional Software** – Microsoft Office (Word, Excel, PowerPoint), Tableau
- **Skills on the Whetstone** – Deep learning (PyTorch and theoretical principals), cloud computing (fundamentals, Amazon AWS and Azure), big data processing (Apache Spark, PySpark)