Reed Hodges
reed.hodges@duke.edu
https://reedhodges.github.io/

Scientist with 9 years of experience in research, programming, and collaborative project management. Passionate about discovering creative solutions to complex problems.

SKILLS

Python, SQL, R, Pandas, NumPy, scikit-learn, C, C++, Tableau, Power BI, AWS, Fortran, HTML/CSS, Github, Bash, Linux/Unix, Microsoft Office, Mathematica, MATLAB, OpenMP, CUDA, Machine Learning

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EXPERIENCE

Research Assistant
Duke University, Durham NC, 2018 - present

- Analyzed large datasets from particle physics experiments using C++ and Python for use in theoretical modeling
- Managed the publicly-available codebases on Github for 4 research projects, encouraging transparency and reproducibility
- Derived over 30 new mathematical functions to explain data from particle colliders
- Collaborated with interdisciplinary teams to translate complex scientific concepts into accessible presentations, communicating the implications and applications of research findings at national and international meetings
- Published 4 papers in top-ranked academic journals, playing a key role in research, writing, and presentation
- Developed a new model to predict the lifetime of a newly discovered particle with 98% accuracy; earned the Goshaw Family Endowment in recognition of this work

Research Assistant
Georgia Southern University, Statesboro GA, 2015 - 2018

- Developed programs in Fortran and Mathematica for mathematical modeling of materials to better understand how they interact with light
- Used iterative testing and optimization techniques to identify a new design for a micrometer-sized material with near-invisibility when exposed to light
- Published 2 research papers in peer-reviewed journals
- Delivered detailed presentations of research findings at conferences to enhance the visibility of the research and foster collaborative opportunities

Petascale Computing Intern
Shodor Education Foundation, 2016 - 2017

- Developed Fortran programs for modeling of the electromagnetic properties of small objects that had over 300 times faster runtimes than existing code
- Transitioned the computation in my undergraduate research to utilize parallelization on GPUs

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EDUCATION

- Ph.D. in Physics
  Duke University
- B.S. in Physics, minor in Mathematics, summa cum laude
  Georgia Southern University