GARY T. HOPPENWORTH

(907)331-9577 | gary.hoppenworth@gmail.com | github.com/garytho

Personal Info

Nationality: United States
Date of Birth: October 12, 1999
Interests: algorithm design and analysis, complexity theory, machine learning

Education

The University of Central Florida, May 2021

- Cumulative GPA: 3.93
- Bachelors in Computer Science, Mathematics
- University Honors College member

Some classes I've taken:

Advanced Calculus I	Linear Algebra & Abstract Algebra I
Processes for Object Oriented Software Design	Quantum Computing (graduate level)
Introduction to Graph Theory	Vector and Tensor Analysis
Design and Analysis of Algorithms (graduate level)	Introduction to Topology

Experience

Undergraduate Research Experience in Program Verification (Summer 2018)

- Under Dr. Sumit Jha I read the textbook *Logic in Computer Science* by Huth. I implemented classical algorithms in the field of program verification.

Member of UCF String Algorithm Research Group (Spring 2018 - Present)

- I have read textbooks, participated in research, and attended seminars as part of this research group.

Experimental Research with the Air Force Research Laboratory (Summer 2019)

- I performed experimental research on a project on program verification and deep learning over the summer of 2019 for 20 hours/week under Dr. Sumit Jha.
- At the end of the summer I wrote a report of my findings on the project, which was presented by my supervisor to the Air Force Research Laboratory Directorate.

Experimental Research with the Department of Defense (Summer - Fall 2019)

- I investigated a problem related to data security and deep learning for a government agency that wishes to remain anonymous.

- I worked with two graduate students under Dr. Jha for 10 hours/week and implemented all experimental results.

Awards Received
- National Merit Scholarship (2017)
- Goldwater Scholarship (2020)
- UCF Distinguished Undergraduate Research Award (2020)

Papers/Presentations
- *A new time-space tradeoff for the shortest unique substring problem*
  - Author: Gary Hoppenworth
  - Presented at: StringMasters 2018

- *Quantifying membership inference attack vulnerability via generalization gap and other model metrics*
  - Authors: Daniel Gibney, Jason Bentley, Gary Hoppenworth, Sumit Jha
  - Awaiting declassification from the Department of Defense

- *Fine-grained Complexity of the Median and Center String Problems under Edit Distance*
  - Authors: Gary Hoppenworth, Daniel Gibney, Jason Bentley, Sharma Thankachan
  - Presented at: European Symposium of Algorithms 2020

Conferences Attended
- StringMasters 2018 (in Lisbon, Portugal)
- 2018 International Workshop on String Algorithms in Bioinformatics (in Orlando)
- 2019 International Symposium on String Processing and Information Retrieval (in Spain)
- 2019 Second Workshop on String Algorithms in Bioinformatics (in Miami)

Extracurriculars
- *Knight Runners (Fall 2017 - Present)*
  - *I attend this running club weekly.*
- *Special Olympics (2015 - 2019)*
  - *When my parents still lived in Anchorage, Alaska, I volunteered regularly to help athletes with disabilities learn to ski at the Hilltop Ski Area.*