Alexander Winkles

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EDUCATION

Georgia Institute of Technology, Atlanta, GA   Expected May 2019
- **Master of Science** – Computational Science & Engineering
- **Relevant Coursework**: Numerical Linear Algebra, Algorithm Design, High Performance Computing, Numerical Ordinary Differential Equations, Iterative Methods, Numerical Partial Differential Equations, Data & Visual Analytics
- **Extracurricular***:*
  - **UGAHacks3***:* Winner of Best Design at the University of Georgia's Hackathon. Our team designed Communal Kitchen, an application-kiosk system used to provide the homeless with personalized home-cooked meals.
  - **GT Symphonic Band**: Performed in the Georgia Institute of Technology Symphonic Band as a trombonist.

The University of Georgia, Athens, GA   May 2017
- **Bachelor of Science** - Mathematics, Chemistry
- **Relevant Coursework**: Multivariable Calculus, Applied Linear Algebra, Differential Equations, Combinatorics, Numerical Analysis I, Introduction to Java, Real Analysis I, Real Analysis II, Abstract Algebra I, Mathematical Modeling
- **Honors**: Phi Beta Kappa, Phi Sigma Pi, Magna Cum Laude, High Honors, Presidential Scholar, Dean's List, Honors Program, Center for Undergraduate Research Opportunities Assistantship

SKILLS

Python, Microsoft Office, Java, C, MPI, Mathematica, MATLAB, LaTeX, Linux, macOS, Git

WORK EXPERIENCE

Georgia Institute of Technology, *Graduate Teaching Assistant,* Atlanta, GA   Fall 2017- Present
- Lead recitations twice a week involving material reviewing and leading practice problems for Multivariable Calculus (MATH 2551) and Differential Equations (MATH 2552)
- Proctor and grades quizzes and tests and host office hours once a week to review material
- Develop the ability to teach technical concepts to a non-technical audience

UGA Small Satellite Research Lab, *Research Team,* Athens, GA   Fall 2016- Spring 2017
- Analyzed models of satellite orbits and satellite remote sensing
- Conducted research pertaining to satellite systems and algorithms of interest
- Contributed to the goal of designing and building satellites to send into orbit for NASA and Air Force grants

UGA Mathematics Department, *Precalculus Peer Mentor,* Athens, GA   Fall 2016- Spring 2017
- Led a lab portion of a precalculus class to help students develop an understanding of precalculus
- Gave short lectures during the lab section as necessary and assisted with explaining material

UGA Mathematics Department, *Independent Researcher,* Athens, GA   Summer 2016- Spring 2017
- Conducted research under Professor Jason Cantarella relating to knot theory and computational geometry
- Developed Python scripts to aid in research endeavors
- Worked on a paper to tabulate unique links up to 10 crossings and attended the UnKnot III conference

UGA Center for Computational Quantum Chemistry, *Summer Undergraduate Fellow,* Athens, GA   Summer 2015, Summer 2016
- Learned quantum chemistry techniques to conduct theoretical chemistry research under Professor Henry F. Schaefer III
- Worked on a summer research project dealing with combustion chemistry which was presented at the end of the program and later published
- Developed programming skills through a series of coding projects

UGA Center for Computational Quantum Chemistry, *Independent Researcher,* Athens, GA   Fall 2015- Fall 2016
- Worked as an independent researcher under Professor Henry F. Schaefer III to complete a thesis on combustion chemistry
- Utilized *ab initio* methods and computational chemistry software packages, computed various chemical properties
- Presented findings at the UGA CURO Symposium in Spring 2016
- Attended the PSI4 Developer workshop

UGA Chemistry Department, *Organic Chemistry Co-TA,* Athens, GA   Spring 2015- Spring 2016
- Assisted graduate students in teaching and supervising undergraduate organic chemistry labs
- Proctored and graded organic chemistry exams

Publications

ML Estep, WJ Morgan, AT Winkles, AS Abbott, N Villegas, JW Mullinax, WE Turner, X Wang, JM Turney, HF Schaefer. "Radicals Derived from Acetaldehyde and Vinyl Alcohol." Phys. Chem. Chem. Phys 2017.