RACHEL E JOHNSON

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EDUCATION

University of Notre Dame *Aug 2020 - May 2024*
BS in Physics, Glynn Family Honors Program *Notre Dame, IN*

GPA: 3.88, Dean's List

Selected Coursework: Multivariable Calculus, Mechanics, Mathematical Reasoning, Electricity & Magnetism

SKILLS

Experienced: LaTeX, Java, Bash, Linux, SVN
Familiar: Python, SQL, Qiskit, C#, HTML, CSS, React, Agile, Git, AWS, SSMS, Exceed, Kornshell, GIMP

EXPERIENCE

Lockheed Martin Aeronautics *June 2020 - July 2020*
Software Engineer Intern *Fort Worth, TX (Virtual)*

Developed a Business Asset Management tool using C# to expedite and organize hundreds of change requests for the F-35 aircraft and communicated my progress in an Agile team environment.

Southern Methodist University *Aug 2019 - Dec 2019*
Variable Star Researcher *Dallas, TX*

Examined and analyzed photometric data and discovered 6 potential Cepheid variable stars.

Richardson Math & Science Team *Sept 2016 - May 2020*
Co-Captain *Richardson, TX*

Created problems of the week for the club to encourage collaborative problem-solving and active learning.

Competed at Physics Olympiad Invitational, UT Arlington Calculus Bowl (3rd Place Team), Purple Comet Math Meet (2nd Place Team in Texas) University of Houston Mathematics Contest, UIL Academics and other events.

Initiated and organized a Q&A event with Grant Sanderson of 3Blue1Brown for junior high students, high school students, college students, and professionals.

PROJECTS

Calculating e Using Monte Carlo Methods and Quantum Amplitude Estimation *iQuHACK | Jan 2021*

Implemented a Monte Carlo simulation using Qiskit to estimate the mathematical constant, e and applied a quantum speedup algorithm to increase efficiency.

Drip Drop *Wacode 2020 | Feb 2020*

Built a website using HTML, CSS, and Bootstrap to educate users on water conservation through projects and quizzes. Also prototyped an irrigation system using an Arduino to optimize for humidity and mitigate water loss.

Won **2nd Place** at the Wacode Hackathon at Baylor University.

MathWorks Math Modeling Challenge *MathWorks | Feb 2019, Feb 2020*

(2019) Built mathematical models to answer questions regarding substance use and abuse. Wrote paper with results. Used regression techniques to model the spread of e-cigarette use over time. **Honorable Mention Team**

(2020) Modeled problems related to the infrastructure and adoption of electric semi-trucks. Wrote paper detailing ideas.

AWARDS & MEMBERSHIP

Society of Physics Students Officer *2020-Present*
Lockheed Martin STEM Scholarship Recipient *2020-Present*
NCWIT Aspirations in Computing Member *2020-Present*
Society of Women Engineers (SWE) Scholarship Recipient *2020*
National Merit Finalist *2020*
Girls Go Cyberstart CTF Finalist, Scholarship Recipient *2019, 2020*
Mu Alpha Theta Math Honor Society Member *2016-2020*
Club Secretary
Scholarship Recipient