Raphael Thorp |

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EDUCATION

- **University of Alabama Huntsville**
    - *Bachelors of Science in Industrial and Systems Engineering*
    - *Bachelors of Science in Mathematics*
    - GPA: 3.1
    - Spring 2022 Graduation

SKILLS

- Technical Skills
    - **Coding Languages**: Python, React, C++, Git, Bash, SQL, JavaScript, Matlab, VBA, Batch Script
    - **Coding Skills:** OOP, Machine Learning, Data Manipulation, Ubuntu, Version Control
    - **Data Analysis**: Excel, Minitab, Pandas
    - **MBSE**: MagicDraw, SysML modeling, UPDM
    - **CAD**: Solid Edge ST10, Solid Works, Fusion 360
    - **3D-Printing**
    - **Design**: Adobe Photoshop, Adobe InDesign, Adobe Illustrator
    - **Microsoft Office**
- Leadership Skills
    - **Public Speaking**
    - **Communication**

PERSONAL PROJECTS

- Flocking Simulation - 2020
    - Utilized Python to create a real-time flocking simulation with Boids Algorithm
    - Developed a machine learning algorithm from the ground up to imitate the simulation, increasing efficiency and simulation size
- Space-Based Solar Power Research - 2018
    - Researched orbital characteristics of a Space-Based Solar Power Satellite in a heliosynchronous orbit
    - Modeled satellite orbit trajectories and earth coverage using AGI's System Tool Kit (STK)
    - Successfully presented my findings at the Florida 4-H State Speech Competition, and to a Duke Energy executive

WORK EXPERIENCE

- Software Development Intern
  (Arcarithm, November 2021-Present)
    - Parse and prepare data for training and evaluating neural networks
    - Develop new methods for training and evaluating neural networks using TensorFlow
    - Aid in creating a front-end server-based GUI using ReactJS and SQL for remotely training and rapidly utilizing neural network models
    - Self-taught common methods and syntax for designing, building, and training neural network architectures using TensorFlow and Keras
    - Self-taught common practices and syntax for ReactJS and React Native development
- Systems Engineering Intern
  (Plasma Processes, November 2020-September 2021)
    - Thoroughly self-taught Excel VBA concepts and coding practices to aid in manufacturing processes and data management
    - Successfully programmed an interactive interface using Excel VBA for efficiently cataloging and tracking manufacturing processes
    - Familiarized myself with Batch script to interface with excel files and automate business tasks
    - Analyzed data from materials performance testing and clearly presented it to DoD engineers
- Undergraduate Research Assistant
  (Mesmer Research Group, October 2020-October 2021)
    - Perform preliminary literature reviews for the analysis of MBSE and the Systems Engineering community's opinion on its value as a modeling tool
    - Develop value models and objective functions to capture the needs and constraints of Army projects and enterprises
- MBSE Intern
  (Trivector Services Inc., Summer 2020)
    - Developed an MBSE architecture model of a conceptual UxV system using the Department of Defense Architecture Framework(DoDAF)
    - Successfully self-taught the usage of Cameo Enterprise Architecture(MagicDraw) to create SysML models
    - Conceptualized an MBSE architecture to be used as a business showcase of MBSE capabilities and successfully briefed my work to executive-level leadership
    - Thoroughly integrated a DoDAF model into existing DoD reference architectures