Andrew R. Schallwig

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EDUCATION

University of Michigan **Ann Arbor, MI**
Bachelor of Science in Computer Engineering *August 2020 – May 2024*
GPA 4.00/4.00 – Received William J. Branstrom Freshman Prize, awarded to top 5% of class
Dean's Honor List: Fall 2020, Winter 2021, Fall 2021
Relevant coursework: Data Structures and Algorithms, Introduction to Logic Design, Introduction to Electronic Circuits, Accelerated Introduction to Computing, Linear Algebra, Solar Energy and Self-Powered Wireless Systems

TECHNICAL SKILLS AND LANGUAGES

Platforms: Windows 10, Linux (Ubuntu)
Programming Languages and APIs: C++, CUDA, MATLAB, Python, Pandas
Tools: Verilog, Autodesk Inventor, Git, LaTeX
Spoken Languages: English, German

TECHNICAL EXPERIENCE

University of Michigan Mars Rover Team **Ann Arbor, MI**
Perception Subteam Software Engineer *August 2020 – Present*

- Design and implement a find-clear-path algorithm that uses parallelization across GPU threads with the CUDA for C++ toolkit to rapidly detect and select the most efficient clear path for the rover
- Developed offline, point cloud reading and writing capabilities in VS Code for C++ to allow for rapid testing of computer vision applications, which was deployed in the final MRover
- Implemented toggleable, efficient "silent mode", and reformed class structure to allow for quick, competition - oriented software execution; this C++ code was deployed in the final MRover codebase

University of Michigan Center for Sustainable Systems **Ann Arbor, MI**
Undergraduate Research Assistant *October 2021 – Present*

- Investigate the unintended repercussions of solar energy policy in California, and how its rollout has caused spikes in greenhouse gas emissions
- Prepare large solar energy, market and weather data sets with Python and Pandas for use with statistical and machine learning models to predict solar energy output as a function of weather and energy system conditions
- Employ this model to understand congestion in the California energy market and the increased greenhouse gas emissions to recommend better policy options for inevitable future solar energy expansions

COMMUNITY ENGAGEMENT AND PROFESSIONAL EXPERIENCE

University of Michigan Seven Mile **Ann Arbor, MI**
Coding Teacher and Detroit Community Schools Community Coordinator *August 2020 – Present*

- Coordinate team members, equipment, transportation, and curriculum with the Detroit Community Schools staff
- Empower K-8 students at Detroit Community Schools in the Brightmoor neighborhood of Detroit to learn programming skills and understand the power of computers
- Teach the foundations of programming through class discussion, block programming, Python, and more

Xhocol'Art Chocolate **Carmel, IN**
Store Manager *June 2019 – June 2020*

- Responsible for sales, opening and closing the shop, and preparing special event orders
- Developed understanding of small business practices while learning directly from its owner

Carmel High School German Department **Carmel, IN**
German Tutor *August 2017 - May 2020*

- Personally selected as the only German tutor for grade of approximately 1250 students to support the German program at Carmel High School
- Instructed students at all grade levels, facilitated discussions about academic plans and goals, and helped with the organizational and logistical needs in response to high student demand in the German department