Joshua David Eckels

5500 Wabash Ave CM926 | Terre Haute, IN 47803 | (812) 453-1974
eckelsjd@rose-hulman.edu | https://github.com/eckelsjd/portfolio

Education:

B.S. Mechanical Engineering **GPA 3.98/4.0** 2017-2021
Rose-Hulman Institute of Technology Terre Haute, IN 47803

- Minors: Aerospace engineering, Thermal Fluids, Computer Science
- Coursework: Propulsion, Thermodynamics, Materials, Aerodynamics, Controls, Fluids Computational Fluid Dynamics, Numerical Simulation, Data Structures

Skills:

Software

- Siemens STAR-CCM+ | Experience in 2D and 3D flow visualization and analysis
- MATLAB | Proficient in numerical analysis and system modeling
- BS SOLIDWORKS | Intermediate CAD and stress/motion analysis experience
- OpenCV | Experience in computer vision and conv neural networks
- ROS | Experience with robotic operating system programming
- Languages | Proficient in Java, Python, C, Linux and shell scripting
- GIS | Experience with 3-GIS software
- Low-level language | MIPS, Verilog, test-benching, assembly, hardware

Practical and Lab

- Wind tunnel labs | Experience with airfoil wind tunnel testing and measurement
- Engine cycle analysis | Familiarity with turbojet engine cycle analysis and carpet plots
- Basic shop skills | Experience with mills, lathes, welding, CNC, etc. fabrication

Experience:

REU Assistive Robotics Lab | Undergraduate Researcher June-Aug 2019
Virginia Tech, Blacksburg, VA 24061

- Investigated and classified navigation constraints and barriers for autonomous vehicles
- Integrated with existing SLAM and convolutional neural networks for robotic navigation
- Utilized Robotic Operating System (ROS) and computer vision software to identify and localize barriers in a 3D point cloud global mapping framework

CS Educational Research | Undergraduate Researcher 2019-ongoing
Rose-Hulman, Terre Haute, IN 47803

- Identifying misunderstandings of computer science students when reasoning about code
- Analyzing data patterns to develop an online reasoning tutor to aid in student code tracing
- Automating the collection of data from students' problem-solving approaches

Metronet Inc. | Design Intern June-Aug 2018
3701 Communications Way, Evansville, IN 47715

- Revised and performed quality control on fiber network designs and construction drawings
- Updated and maintained company as-built fiber designs utilizing GIS software
- Generated bills of materials and compiled and documented procedure manuals

AskRose Homework Help | Online Tutor 2017-ongoing
Rose-Hulman, Terre Haute, IN 47803

- Advised and strengthened students in their learning and homework
- Updated and maintained company as-built fiber designs utilizing GIS software
- Utilized various media resources to communicate problem-solving strategies

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Various Rec Centers | Lifeguard 2016-2019
YMCA, Evansville, IN 47715

- Supervised and accounted for well-being of all patrons
- Maintained pool deck and accommodated manager's needs

Activities & Honors:

Involvement

- Formula SAE | Aero team member, simulating new under-tray design in CFD
- Choir | President and organization lead in acapella and chamber choirs
- Tau Beta Pi | Engineering honor society and community involvement

Honors

- Barry Goldwater research scholarship nomination 2019
- Heminway Bronze medal for top of undergraduate class
- Rose-Hulman Dean's List 7/7 quarters

References:

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