Joshua David Eckels

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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, Music
- Coursework: Propulsion, Thermodynamics, Internal Combustion Engines, Aerodynamics Computational Fluid Dynamics, Numerical Simulation, Data Structures

Experience:

Los Alamos Dynamics | Undergraduate Researcher 2020-ongoing
Los Alamos National Laboratory, Los Alamos, NM 87545

- Performing ultrasonic wavefield imaging on components for non-destructive evaluation
- Improving performance and processing time of acoustic wavenumber spectroscopy by training a convolutional neural network to recognize defects in plate-like structures
- Integrating ANSYS, MATLAB, and deep learning workflow with Python automation

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

- Investigated off-road navigation constraints for autonomous rovers and handicapped users
- Integrated simultaneous localization and mapping software with object detection algorithms to identify and localize barriers in a 3D point cloud map for off-road robotic navigation
- Tailored navigation routing algorithms to the special needs of handicapped users

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

Skills:

Software

- Siemens STAR-CCM+ | Experience in 2D and 3D flow visualization and CFD
- Ricardo WAVE | Experience in combustion engine analysis and simulation
- ANSYS Mech, Fluent | Proficient in ANSYS workbench tools and Python scripting
- MATLAB | Proficient in numerical analysis and system modeling
- BS SOLIDWORKS | Intermediate CAD and stress/motion analysis experience
- OpenCV, ROS, Fast.ai | Intermediate in machine learning and conv neural networks
- Cloud computing | Remote deep learning virtual machine with GPU acceleration
- Languages | Proficient in Java, Python, C, Linux and shell scripting

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
- Embedded systems | Experience with microcontrollers (Arduino, C++, etc.)

Activities & Honors:

Activities

- Formula SAE | Aero team member, simulating new under-tray design in CFD
- Tau Beta Pi | Engineering honor society and community involvement

Honors

- Heminway Bronze medal for top of undergraduate class 2019
- Rose-Hulman Dean's List 10/10 quarters 2017-present