Joshua David Eckels
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Education : **Bachelor of Science, Mechanical Engineering GPA 3.98/4.0** **Aug 2017 – May 2021**
Rose-Hulman Institute of Technology, Terre Haute, IN 47803
- Minors: Computer science, Aerospace engineering
- Courses: Thermodynamics, Fluids, Propulsion, Statics, Materials, Dynamics, Programming, Data structures, Computer architecture
- Leadership/involvement: Grand prix engineering (GPE), Maker lab, Design Build Fly (DBF), Chorus, Chamber, Acappella (president), Tau Beta Pi

Experience : **REU at Virginia Tech**, Blacksburg, VA 24061 **June 2019 – Aug 2019**
Researcher – 40 hr / week
- Research Experience for Undergraduates (REU) in Automotive Engineering
- Accessibility constraint mapping for on-road, off-road, indoor autonomous transit/delivery
- Investigated and classified navigation constraints and barriers for autonomous vehicles
- Utilized Robotic Operating System (ROS) and computer vision (OpenCV) software to identify and localize barriers/constraints in a 3D global mapping framework
- Integrated with existing Simultaneous Localization and Mapping (SLAM) and convolutional neural networks (CNNs) software for robotic navigation

Metronet Inc., 3701 Communications Way, Evansville, IN 47715 **June 2018 – Aug 2018**
Design Intern – 40 hr / week
- Updated and maintained company as-built fiber designs utilizing GIS software
- Revised and performed quality control on over 100 outsourced fiber network designs
- Generated 10 fiber network construction drawings and bills of materials for new markets
- Compiled and documented a 50-page procedure manual

Projects : **Java – Software development** **Sept 2018**
- Utilized software engineering principles to design a computer application
- Implemented Java classes utilizing UML, polymorphism, interfaces, Java-swing GUI

Python – Robotics **Feb 2018**
- Implemented Python classes for remote robot functionality
- Leveraged Python graphics and shell scripting for robotic control and navigation

Skills : **Computer skills**
- Python, Java, C, C++
- Matlab, Simulink, Maple
- Solidworks, AutoCAD, Inventor
- MIPS assembly, Verilog, Xilinx
- Geographical information systems (3-GIS)
- Linux, Ubuntu, Windows, Shell scripting and automation, Git
- Computer vision (OpenCV), Convolutional neural networks (Keras, TensorFlow)
- Robotic Operating System (ROS), Simultaneous Localization and Mapping (SLAM)

Other skills/interests
- Gas metal arc welding (GMARC)
- Shop equipment (mills, lathes, saws, CNC, etc.)
- Computational fluid dynamics (CFD), Finite element analysis (FEA)