Jakob Madgar
Mechanical Engineer

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Experience

Research Engineer II

⊙ Transportation Research Center   📅 Jul 21 - Current

Working with Waymo Systems

- Design Verification and Planning of Platform Requirements and Testing of Autonomous Vehicles
- Body Control Scripting, Testing, and Analysis
- Reading and Creating Electrical Harnesses and diagrams for power and communication systems
- Test design, scheduling, coordination, and execution of collision avoidance testing and limit testing
- Web App Tool Development for Data Analysis and Test Result Tracking
- Hands-on diagnostic and validation of autonomous systems at a component level
- Autonomous Heavy Truck Testing

Project Manager and Suspension Director

⊙ Formula Buckeyes FSAE Team   📅 Aug 17 - May 21

Designed, Built, and Raced 4 Formula Style Vehicles

- Responsibilities involved outlining a plan to design, build, and test a Formula SAE vehicle each year along with directing 50+ driven engineering students through the pandemic.
- Designed four similar suspension systems
- Led the complete vehicle architecture re-design for FB21
- Simulated full vehicle and suspension systems in CarSim and MATLAB/Simulink
- Developed tools in MATLAB for tire analysis, later converted tools to python
- Completed senior capstone on the co-design of suspension and aerodynamic systems

Test and Simulation Engineer Co-Op

⊙ American Showa R&D   📅 May 19 - Dec 19

Shock absorber laboratory and on-vehicle testing

- Implantation of laser displacement sensors on to vehicles along with comparing them to current technology for stroke sensing.
- Installed a suspension-oriented sensing package on an OEM side-by-side for ride characterization and analysis
- Shock Valving characterization on EM dyno

Skills

- **Rapid Prototyping**
- **CAE Vehicle Design and Simulation**
- **DAQ System Integration and Testing**
- **Python / MATLAB Tool Development**
- **Project / Resource Management**
- **Novice Software Programming in Python and ML Frameworks**

Education

B.S. in Mechanical Engineering

⊙ The Ohio State University   📅 Aug 16 – May 21

- Provost Merit Scholarship
- GPA: 3.28

Achievements

- FSAE Michigan 13th Overall and FSAE North 3rd Overall
- Led FSAE team to design and build a whole new vehicle during the pandemic with a top five finish in FSAE Design (of 120)
- Stow Munroe Falls Football Captain and OHSAA All-State Linebacker 2016. Track Captain 2015 and 2016

Interests / Personal Projects

- Investigation of ML in various applications of control and finance
- Propulsive Trailer Research
- Tire Data App
- Personal Website
- Python and C++
- 3D Printing

Website	Work Example: Tire App	Work Example: Presentation	Article about me

jakobmadgar.com

References are Available Upon Request / Digital copy of resume on website