GUNNER MOLEK

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EDUCATION

University of North Carolina at Charlotte   May 2024
Bachelor of Science in Mechanical Engineering (Motorsports Concentration)   GPA 3.46

Relevant Coursework: Advanced Vehicle Dynamics, Tire Mechanics, Motorsports Instrumentation, Advanced Automotive Power Plants (Combustion/Hybrid), Thermodynamics, Heat Transfer, Statics, Dynamic Systems, Computational Methods, Solid and Fluid Mechanics, Engineering Graphics, Manufacturing Processes, Design Labs, Engineering Materials, Basic Electrical Engineering.

TECHNICAL SKILLS

Software: Inventor, SolidWorks, Dymola, MATLAB, LabView, PowerInspect, MoTec I2, Roehrig Shock, MS Excel
Fabrication: 3D Printing, MIG/Stick Welding (NCCER certified), Plasma Cutter, Mill, Lathe, Mechanic/Carpentry tools
Instrumentation: Faro Arm, Pull-Down/Push-Up Rigs, Spring Rater, Digital Multimeter, Oscilloscope

MOTORSPORTS EXPERIENCE

Lead Race Engineer, *McAnally-Hilgemann Racing (MHR)*, Statesville, NC   Jan 2024 – Present

Engineer for the #19 Napa Auto Parts truck in the NASCAR Craftsman Truck Series.

- Create test plans and support Driver-in-the-Loop (DiL) simulator sessions.
- Construct vehicle simulation models for race events using General Motors proprietary tools.
- Maintain simulation baseline models, analyze results, and correlate sim data with track data.
- Assist Crew Chief with race strategy, pre-event preparation, and post-event analysis.
- Complete vehicle build sheets and prepare truck for races using the setup plate and push-up rig.
- Analyze tire data, calculate fuel mileage, and otherwise support on-track activity during races.
- Manage team suspension, shock, and spring electronic inventory.
- Interface with the General Motors support engineer.

Race Engineer, *AM Racing*, Statesville, NC   May 2022 – Dec 2023

Engineer for the #22 truck in the NASCAR Craftsman Series and the #32 car in the ARCA Menards Series.

- Acquired and analyzed data using Excel, MoTeC, Roehrig and Ford proprietary software packages.
- Worked directly with the Crew Chief and Car Chief on the setup plate and pull-down rig.
- Completed chassis and parts measurements using Faro Arm and PowerInspect software.
- Built tire sets for each race using Goodyear-supplied data.
- Maintained parts inventory and mileage databases.
- Designed chassis and body components using AutoDesk Inventor and SolidWorks.
- Fabricated and modified components using 3D printer and/or machine shop equipment.
- Coordinated with external suppliers to acquire wheels, tires, shocks, etc.
- Provided design and other auxiliary support to AM Racing's Xfinity team as needed.

Formula SAE Powertrain Team Engineer, *49ers Racing*, UNC Charlotte   Jan 2022 – Dec 2022

- Personal primary focus was on optimizing the intake and exhaust systems for the 2023 car. Researched intake resonance, evaluated lightweight exhaust options, sized electronic throttle body, and created plenum design.

Vehicle Mechanic, *Personal Hobby*   2015 – Present

- Proficient in a wide array of automotive maintenance and repair projects including engine and turbo installations, suspension modifications, clutch and gear replacement, and more.

ENGINEERING PROJECTS

Transport Dolly for Daimler Trucks North America, *UNCC Senior Design Project*   Aug 2023 – May 2024

- Working on a 5-man team to produce a safe, durable, and efficient 4-wheel dolly system capable of transporting semi-trucks throughout an assembly plant. Processes include concept, design, prototyping, and testing.

Freelance Engineering Projects for AirBox, Statesville, NC   Jan 2023 – Dec 2023

- Assisted with the design, modeling, prototyping, and testing of various industrial air purifying systems.