Robert Horvath

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Education

UT AUSTIN

BS in Mechanical Engineering, Certificate in CS

Spring 2025 Austin, TX

GPA: 4.0/4.0

Links

GitHub **rhorvath02**

Linkedin **rhorvath2002**

Coursework

Mechatronics
Fluid Mechanics
Materials Engineering
Mechanics of Solids
Dynamics
Statics
Thermodynamics
Differential Equations
Linear Algebra
Calculus (I, II, III)
Algorithms and Data Structures
IOS Computing

Skills

PROGRAMMING

Python • Javascript (HTML/CSS) • Swift • Matlab

SOFTWARE

Solidworks • Catia v5 • 3D Experience • Ansys Mechanical • Git • Linux • Azure DevOps • Excel

MISC

Manual machining (Lathe, Mill, Power Tools, etc.)

LANGUAGES

English • Magyar

Honors

ENGINEERING HONORS

Designates that an engineering student ranks in the top ten percent of their class and department

UNIVERSITY HONORS

(Fall 2021, Spring 2022, Fall 2022, Fall 2023)
Awarded to students who earn at least 45 grade points, maintain a GPA of at least 3.50, and have no incomplete grades.

Experience

LONGHORN RACING

Sep 2021 – Present Austin, TX

Lead Dynamics Engineer

- Wrote optimal vehicle trajectory script (curvature minimization)
- Analyzed tire data and implemented a combined loading model (Pacejka fits fed into Nicolas-Comstock model)
- Set vehicle parameters and loading conditions via point-mass sim, stability analysis, and cross-system requirements
- Coordinated suspension, unsprung, and steering subsystems (managed timeline, assigned tasks, oversaw all design work)
- Designed steering system and provided all brake calculations

Lead Suspension Engineer

- Oversaw design, structural analysis, and functionality of suspension subsystem
- Wrote constrained optimization program in Python to maximize roll adjustability without yield of components
- Worked with kinematic solvers and hand calculations to reach target parameters (camber, camber gain, ride rate, roll stiffness, etc.)
- Designed various suspension components in Solidworks and managed integration with other vehicle systems

CHASSIS ENGINEERING INTERN

Tesla, Inc

May 2023 – August 2023 Austin, TX

- Designed various stamped and machined chassis components
- Modeled nonlinear/side load springs without the use of finite element solvers
- Ran FEA on new and existing components using Ansys Mechanical
- Worked on coil spring suspension design and calculations
- Communicated with suppliers for part design and pricing
- Assisted in production process as new builds started

MESHING SOFTWARE INTERN

Ansys, Inc

January 2023 – April 2023 Austin, TX

- Developed regression tests for new and existing products
- Created PyPrime scripts (meshing entirely within a Python script)
- Wrote JavaScript macros for Workbench tests
- Implemented image comparison to validate mesh quality and detect abrupt changes in mesh quality/composition
- Extensive work with Ansys Mechanical, PyPrime, PrimeApp, and version control

MECHANICAL ENGINEERING INTERN

Harmonic Bionics, Inc

May 2022 – Aug 2022 Austin, TX

- Designed actuator life cycle tests to ensure functionality between maintenance periods
- Gathered max torque outputs by simulating upper bound of patients (values important in life cycle tests)
- Designed calibration fixtures for precise tuning of load cells and verification of springs (spring constant and free length)
- Employed GD&T in the drawing and manufacturing process
- Worked with medical device quality system