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

Algorithms and Data Structures
Engineering Computation
Engineering Design
IOS Computing
Mechanics of Solids
Dynamics
Statics
Thermodynamics

Skills

PROGRAMMING

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

SOFTWARE

Solidworks • 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)
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)
- Handled ordering of raw materials and COTS components

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 simulations 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

MESHING SOFTWARE INTERN

Ansys, Inc

January 2023 – April 2022 Austin, TX

- Developed regression tests for new and existing products
- Created tests contained to a single Python file using PyPrime (where tests previously launched workbench → ran workbench script → ran macro → opened and ran mechanical → exported results)
- Scripted macros (JavaScript) for Workbench tests
- Used image comparison to validate mesh quality and detect abrupt changes in meshing method
- 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

COMPETITION STAFF/ORGANIZER

World Cube Association

Mar 2014 – Present

- Staffed and organized Rubik's Cube competitions
- Held state record in the pyraminx event for two years
- Staffed for US Nationals 2016, 2018, and 2019 with 534, 634, and 751 competitors, respectively