PREP intern for Perception project

The Automated Vehicle (AV) program at NIST is seeking a candidate to work on a project related to AV perception sensors' evaluation. The project requires a candidate with multidisciplinary skills that will execute a majority of the following tasks with guidance from the project leader.

- Integrate automotive perception sensors such as lidars, radars, cameras, GPS sensors into a testbed that uses ROS2 on Ubuntu/Linux and acquire data.
- Design and execute sensor test procedures in various static and dynamic environments.
- Design test artifacts, setups using CAD software (preferably Solidworks) and send it for fabrication.
- Be able to design fixtures, mounting apparatus etc. using 80-20 extrusions.
- Collecting data with ground truth systems (laser trackers etc.); Training will be given if no experience.
- Perform market research on products, equipment, sensors that are relevant to the project and compiling information for purchases.
- Conducting and documenting experiments, analyzing data, and writing reports.
- Present work to the team, articulate ideas and seek feedback.
- Must have skills and experience:
  - Linux, ROS and ROS2.
  - C, C++, Python – Relevant to compile modules for ROS2.
  - MATLAB and Python programming for exploratory data analysis and statistics.
  - Experience in working with 3D point cloud data.
  - Experience with CAD software for making parts/fixtures for the setup.
  - Experience with Version control software and workflow (Git/Github/Gitlab).
  - Hands on work experience with tools, 80-20 extrusions.
  - Report writing and making presentations with relevant figures/illustrations/data.
- Nice to have:
  - Solidworks for CAD.
  - Be able to use in-house machining equipment (after training) for minor modifications.
  - Familiarity with Raspberry Pis and Arduino controllers (or alternatives).

- Qualifications:
  - BS or MS in the following or related engineering fields:
    - Electrical Engineering.
    - Mechanical Engineering.
    - Computer Engineering.
    - Robotics.