[Text

Description automatically generated](https://www.linkedin.com/company/mcmaster-autoplow/)Nvidia Mounts (RobCar)

*Mechanical-oriented*

**Objective:**

Design mounts that can match the mounting holes on the Nvidia hardware to the preexisting mounting holes on the RobCar. The mounts should support the weight of the Nvidia and withstand a light amount of compressive force (ie for when people are plugging things in (side *or* top) or modifying the circuitry)

**Constraint(s):**

The mounts must match the hole pattern well (ie don’t need to pull the mounts slightly to line it up with the holes), and the design should incorporate mounting features like bolts with metal nuts pushed into the design (ie no plastic threads, a slot for a small nut instead)

**Preliminary Ideas/Brainstorming:**

Diagram

Description automatically generated

*^^draw.io is used, but above diagram is only a suggestion (feel free to make your own brainstorming process/setup!)*

**Concept Sketches :**

**Matrix Evaluation (Decision and Pugh):**

Decision Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria** | **Weighting (\_\\_)** | **Idea #1** | **Idea #2** | **Idea #n** |
| *Criteria #1* | W1 | W1 \* R1 = S1 | W1 \* R1 = S1 | W1 \* R1 = S1 |
| *Criteria #2* | W2 | W2 \* R2 = S2 | W2 \* R2 = S2 | W2 \* R2 = S2 |
| *Criteria #3* | W3 | W3 \* R3 = S3 | W3 \* R3 = S3 | W3 \* R3 = S3 |
| *Criteria #n* | W4 | W4 \* R4 = S4 | W4 \* R4 = S4 | W4 \* R4 = S4 |
| **Total** |  | **SUM(S1;S4)** | **SUM(S1;S4)** | **SUM(S1;S4)** |

*R\_ = rating for that criterion*

*(rating can be out of whatever you choose, but try to stick to round numbers like \_/5 or \_/10)*

*\*\*\*Make sure to rate designs criteria appropriately (i.e., if cost is high, rating shouldn’t be high)\*\*\**

Pugh Matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Weighting (\_\\_)** | Current Solution | **Idea #1** | **Idea #2** | **Idea #n** |
| *Criteria #1* | W1 | 0 | +1 \* W1 | 0 \* W1 | -1 \* W1 |
| *Criteria #2* | W2 | 0 | 0 \* W2 | 0 \* W2 | -1 \* W2 |
| *Criteria #3* | W3 | 0 | -1 \* W3 | -1 \* W3 | -1 \* W3 |
| *Criteria #n* | W4 | 0 | -1 \* W4 | +1 \* W4 | 0 \* W4 |
| **Total** |  | 0 | **SUM(S1;S4)** | **SUM(S1;S4)** | **SUM(S1;S4)** |

*Rate with +1 if idea is better, 0 if idea is just as good, and -1 if idea is worse than currently selected design*

\*\*\*Weightings are **optional**, but they help identify designs based on proficiency *and* priority\*\*\*

**Low-Fidelity Prototype Pictures:**

(CAD designs/prints, cardboard + duct tape models, as long as it’s a physical prototype)

**Design Considerations/Adjustments:**

**Test Plan:**

**Final Design:**