| Subsystem | Item | unit size | Cost/unit | \# | Source | Subtotals | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Electrical | Sparkfun Solderable Breadboard |  | \$4.95 | 2 | DigiKey | \$9.90 | 235.46 |
|  | Adafruit Solderable Breadboard |  | \$4.00 | 2 | ME210 Stockroom | \$8.00 |  |
|  | Mikroelekronka Solderable Breadboard |  | \$0.00 | 1 | Cabinet of Freedom | \$0.00 |  |
|  | 4-40 Hex Standoffs, 1 inch |  | \$0.20 | 16 | ME210 Stockroom | \$3.20 |  |
|  | HC-SR04 Ultrasonic Distance Sensor |  | \$1.68 | 3 | Amazon | \$5.04 |  |
|  | Coax Cable, 4 Conductor | 20 cm | \$0.00 | 1 | Cabinet of Freedom | \$0.00 |  |
|  | Male Molex Connetor, 2 pin |  | \$0.25 | 15 | ME210 Stockroom | \$3.75 |  |
|  | Female Molex Connector, 2pin |  | \$0.25 | 15 | ME210 Stockroom | \$3.75 |  |
|  | Female Molex Connector, 3pin |  | \$0.25 | 4 | ME210 Stockroom | \$1.00 |  |
|  | Female Molex Connector, 4pin |  | \$0.25 | 6 | ME210 Stockroom | \$1.50 |  |
|  | Male Molex Connector, 4pin |  | \$0.25 | 1 | ME210 Stockroom | \$0.25 |  |
|  | 4-40 Hex Standoffs, 1/2 inch |  | \$0.20 | 8 | ME210 Stockroom | \$1.60 |  |
|  | Male Molex Connector, 4pin |  | \$0.25 | 3 | ME210 Stockroom | \$0.75 |  |
|  | Qunqi Buck Converter |  | \$1.98 | 3 | Amazon | \$5.94 |  |
|  | Fuse, 5A |  | \$0.25 | 1 | ME210 Stockroom | \$0.25 |  |
|  | Fuse Holder |  | \$1.00 | 1 | ME210 Stockroom | \$1.00 |  |
|  | Switch, SPDT |  | \$1.25 | 1 | ME210 Stockroom | \$1.25 |  |
|  | LM339 Quad Comparator |  | \$0.00 | 3 | Lab Kits | \$0.00 |  |
|  | Pololu Encoders |  | \$7.95 | 0 | 218B Stockroom | \$0.00 |  |
|  | MAX4617CPE+-ND 8x1 Multiplexer |  | \$2.22 | 2 | DigiKey | \$4.44 |  |
|  | C535A-WJN-CT0W0231-ND LED COOL WHITE |  | \$0.21 | 1 | DigiKey | \$0.21 |  |
|  | C503B-RCN-CW0Z0AA1-ND LED RED CLEAR |  | \$0.15 | 1 | DigiKey | \$0.15 |  |
|  | C503B-GCS-CY0C0791-ND LED GREEN |  | \$0.24 | 1 | DigiKey | \$0.24 |  |
|  | Resistors, various |  | \$0.01 | 24 | 218B Stockroom | \$0.24 |  |
|  | Mono Capacitors, various |  | \$0.15 | 10 | 218B Stockroom | \$1.50 |  |
|  | Polarized Capacitors, various |  | \$0.25 | 10 | 218B Stockroom | \$2.50 |  |
|  | TP0606N3 Small signal NMOSFET |  | \$0.10 | 4 | ME210 Stockroom | \$0.40 |  |
|  | 2N3904 NPN BJT |  | \$0.10 | 4 | ME210 Stockroom | \$0.40 |  |
|  | Qunqi L298N H-Bridge Module |  | \$7.00 | 1 | Amazon | \$7.00 |  |
|  | Potentiometer, 100K |  | \$0.89 | 3 | Jameco | \$2.67 |  |


|  | DRV5053VAQLPGRQ1 Hall Effect Sensor |  | \$0.50 | 1 | 218B Stockroom | \$0.50 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | TL974IN Rail-to-Rail Quad Op-Amp |  | \$0.98 | 1 | DigiKey | \$0.98 |  |
|  | Braided Wire | 1 ft | \$0.10 | 10 | 218B Stockroom | \$1.00 |  |
|  | Heat shrink, 1/8", black, 4' length |  | \$0.99 | 3 | 218B Stockroom | \$2.97 |  |
|  | Lite-On LTR-3208E photo-transistor, IR, 940 nm |  | \$0.00 | 3 | Lab Kits | \$0.00 |  |
|  | 6C NiMh Battery |  | \$8.00 | 2 | 218B Stockroom | \$16.00 |  |
|  | Battery Connectors |  | \$2.00 | 2 | ME210 Stockroom | \$4.00 |  |
| Motion | Omni wheels | 1 | \$10.00 | 4 | old ME210 robot | \$40.00 |  |
|  | 1/4" Duron | 18x24" | \$4.00 | 2 | PRL | \$8.00 |  |
|  | 1/8" Duron | 48x24" | \$6.00 | 1 | PRL | \$6.00 |  |
|  | 1/4" timing belt (short) | 1 | \$3.78 | 1 | McMaster | \$3.78 |  |
|  | 1/4" timing belt (long) | 1 | \$0.00 | 1 | scrap | \$0.00 |  |
|  | timing belt pulley | 1 | \$9.95 | 4 | McMaster | \$39.80 |  |
|  | \#10 washers | 100 | \$0.00 | 1 | scrap | \$0.00 |  |
|  | 1/8" bushings | 1 | \$0.78 | 6 | McMaster | \$4.68 |  |
|  | 1/8"x1/8" key stock | 12" | \$3.18 | 1 | McMaster | \$3.18 |  |
|  | 8-32 3/4" screws | 100 | \$0.00 | 1 | McMaster(used few) | \$0.00 |  |
|  | 8-32 narrow nuts | 100 | \$0.00 | 1 | McMaster(used few) | \$0.00 |  |
|  | \#8 washer | 100 | \$0.00 | 1 | McMaster(used few) | \$0.00 |  |
|  | M3 screw (motor mounting) | 100 | \$0.00 | 1 | McMaster(used few) | \$0.00 |  |
|  | 1/8" shaft | 12" | \$6.58 | 2 | McMaster | \$13.16 |  |
|  | Hextronix HX-5010 | 1 | \$5.40 | 3 | TA closet | \$16.20 |  |
| Launcher | 1/4" flanged bushings | 1 | \$0.79 | 2 |  | \$1.58 |  |
|  | 1/4" aluminum shaft | 12" | \$6.70 | 1 |  | \$6.70 |  |

