

DURIP 2020 -- Equipment Itemization			
	Qty	Unit cost	Total cost
(i) High-Performance Computers for Data Analysis and Model Learning in Neuron-Inspired Perception and Navigation			
A. Node on the B.U. Shared Computing Cluster (part of the Massachusetts Green High Performance Computing Center (MGHPCC))			
Dell PowerEdge C4140 Server Two Intel Xeon Gold 6242 processors 2.8GHz, 16 core, Cascade Lake (32 total cores) 192GB memory 10 Gigabit Ethernet networking 240GB Solid State Disk*	4	\$36,176.00	\$144,704.00
TrippLite 14AWG IEC-320-C19 to IEC-320-C14 Heavy Duty Power Cord - 6 ft for Dell PowerEdge C4140 Servers	8	\$14.61	\$116.88
50 TB storage @ \$86/TB	50	\$86.00	\$4,300.00
B. High-performance workstation(s)			
Lambda Deep Learning Workstation with 4 GPUs. Includes: Desktop computer for TensorFlow, Keras, and PyTorch. It comes with four RTX 8000 GPUs. Includes 3 yr. warranty and support.	2	\$26,945.00	\$53,890.00
C. Infrared cameras for animal motion capture			
FLIR One Gen 3	6	\$200.00	\$1,200.00
FLIR Blackfly-S-USB3	4	\$365.00	\$1,460.00
Academic discount		\$73.00	-\$73.00
FLIR A65 Automation Thermal Camera	3	\$9,000.00	\$27,000.00
Academic discount		\$1,350.00	-\$1,350.00
ResearchIR Max Portable HSDR CAMERA LINK	2	\$16,500.00	\$33,000.00
Academic discount		\$1,650.00	-\$1,650.00
Seagate 5 TB external disk drives	20	\$114.62	\$2,292.40
D. Robot systems			
Clearpath Jackal robots for outdoor experiments	2	\$11,750.00	\$23,500.00
Academic discount	2	-\$1,000.00	-\$2,000.00
Jackal Computer: Ultra Upgrade	2	\$2,775.00	\$5,550.00
Jackal Computer: Mini ITX GPU Upgrade	2	\$575.00	\$1,150.00
Jackal: Extra Lithium Ion Battery	2	\$550.00	\$1,100.00
FLIR (Point Grey) Bumblebee BB2 Colour Stereo Camera	1	\$3,415.00	\$3,415.00
FLIR BlackFly S [Balanced, Normal FOV] Camera	1	\$1,850.00	\$1,850.00
AXIS Outdoor PTZ Camera	2	\$2,450.00	\$4,900.00
LiDAR 3D - Velodyne VLP-16	2	\$6,500.00	\$13,000.00
GPS/GNSS - NovAtel SMART7 GPS	2	\$9,250.00	\$18,500.00
Long Range Wireless Network Station	1	\$4,450.00	\$4,450.00
Differential Drive (Dingo "D") Indoor Robot Platform	2	\$7,700.00	\$15,400.00
Academic discount	2	-\$1,000.00	-\$2,000.00
Omnidirectional Drive (Dingo "O") Indoor Robot Platform	2	\$12,200.00	\$24,400.00
Academic discount	2	-\$1,500.00	-\$3,000.00
Dingo Package - Autonomy	4	\$19,318.00	\$77,272.00
FLIR (Point Grey) Bumblebee BB2 Colour Stereo Camera	2	\$3,415.00	\$6,830.00
FLIR BlackFly S [Balanced, Normal FOV] Camera	2	\$1,850.00	\$3,700.00
AXIS Outdoor PTZ Camera	4	\$2,450.00	\$9,800.00
LiDAR 3D - Velodyne VLP-16	4	\$6,500.00	\$26,000.00
Shipping			\$1,000.00
Total			\$497,047.28