	I am designing an autonomous indoor inspection rover that operates inside large factory environments. The rover must perform navigation using wheel encoders, IMU and LiDAR, and optionally vision sensors. It should be capable of processing LiDAR point cloud data or image data in real time, communicate wirelessly using Wi-Fi/BLE, interface with motor drivers and sensors through I2C, SPI and UART, and operate for at least two hours on a 24 V Li-ion battery. Since the processing requirements exceed the capability of a microcontroller, a suitable embedded compute module is required.	
S.NO	**Raspberry Pi CM4**	**NVIDIA Jetson Xavier NX**
1	Quad A72 CPU (good for control stacks, light vision). No onboard GPU acceleration for neural nets beyond CPU.	Multi-core ARM CPU + NVIDIA GPU/Tensor cores — high parallel performance for vision/point-cloud processing and neural nets.
2	Good for navigation, IMU/encoder fusion, light SLAM (sparse), small vision models.	Real-time dense SLAM, neural network inference (YOLO/Segmentation), LiDAR processing, point-cloud filtering/ICP accelerated.
3	PCIe on some carriers, plenty of USB, GPIO, SPI, I2C, UART via carrier board.	Rich PCIe, multiple MIPI CSI, USB, SPI/I2C/UART — designed for camera and sensor integration.
4	Low — nominal ~3–7 W depending on load and CM4 variant. Very power-efficient for CPU tasks.	Higher — typical 10–30 W depending on power mode; configurable for performance vs power. Better performance-per-W for GPU tasks.
5	Minimal cooling, easy to integrate.	Requires active/passive cooling; thermal design important.
6	Low cost, easy procurement.	Higher cost