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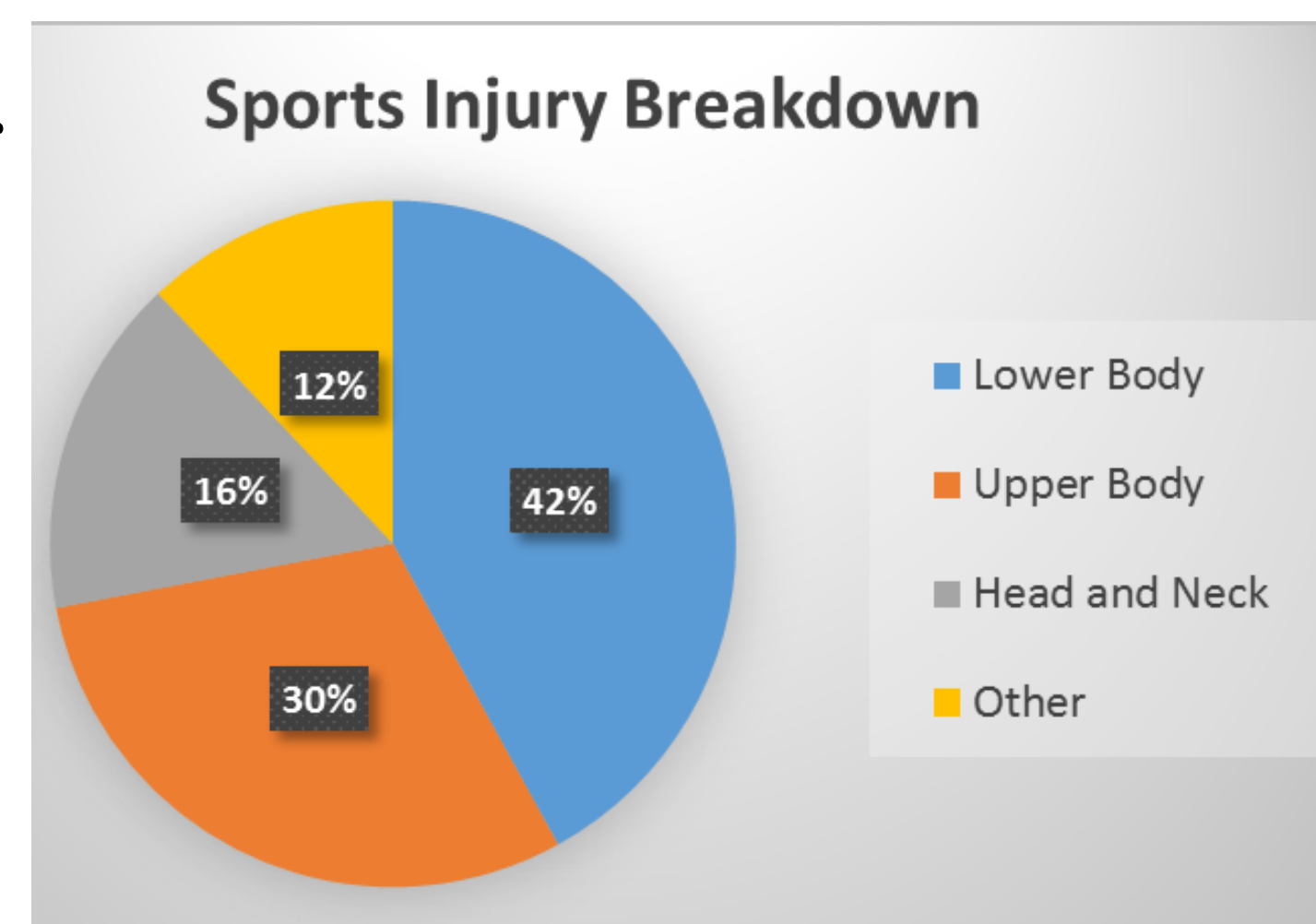
Mission Statement

To build an accessible, easy to use knee brace that collects real-time data of an athlete's movements.



Background

- Knee injuries are very common among amateur and professional athletes.
- These injuries have plagued almost all the prominent sports played in the USA today.

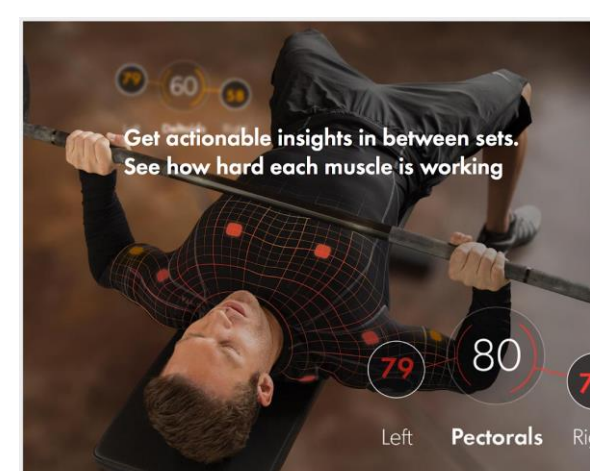


Benchmarks

Donjoy Brace



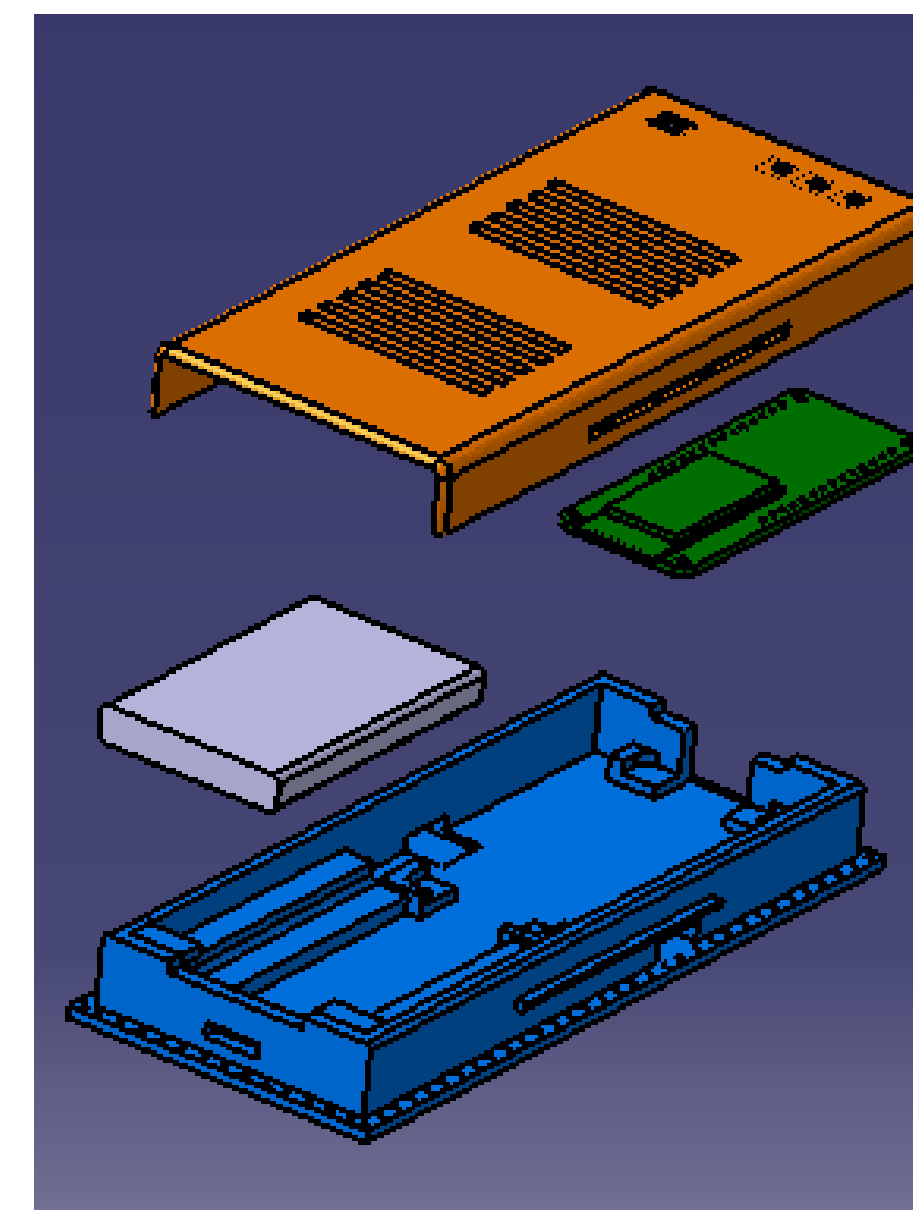
Athos Active Gear



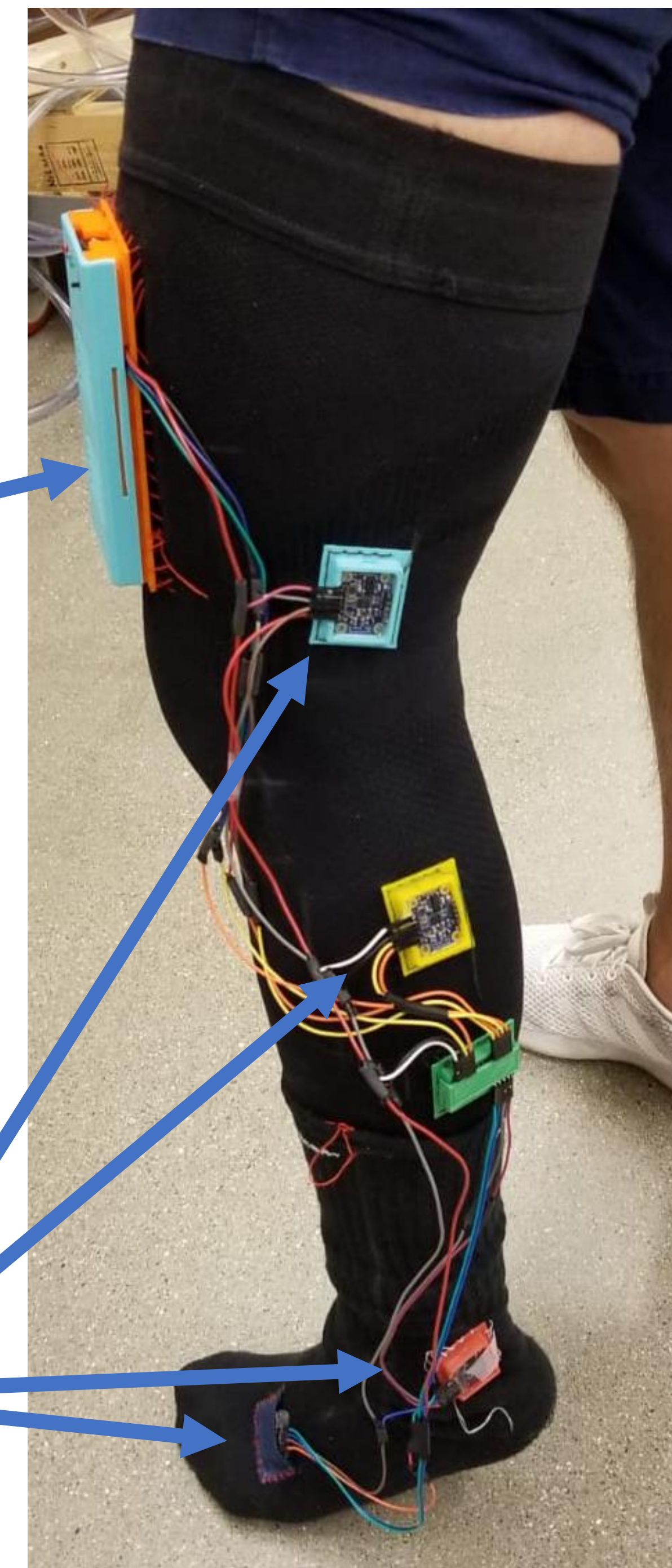
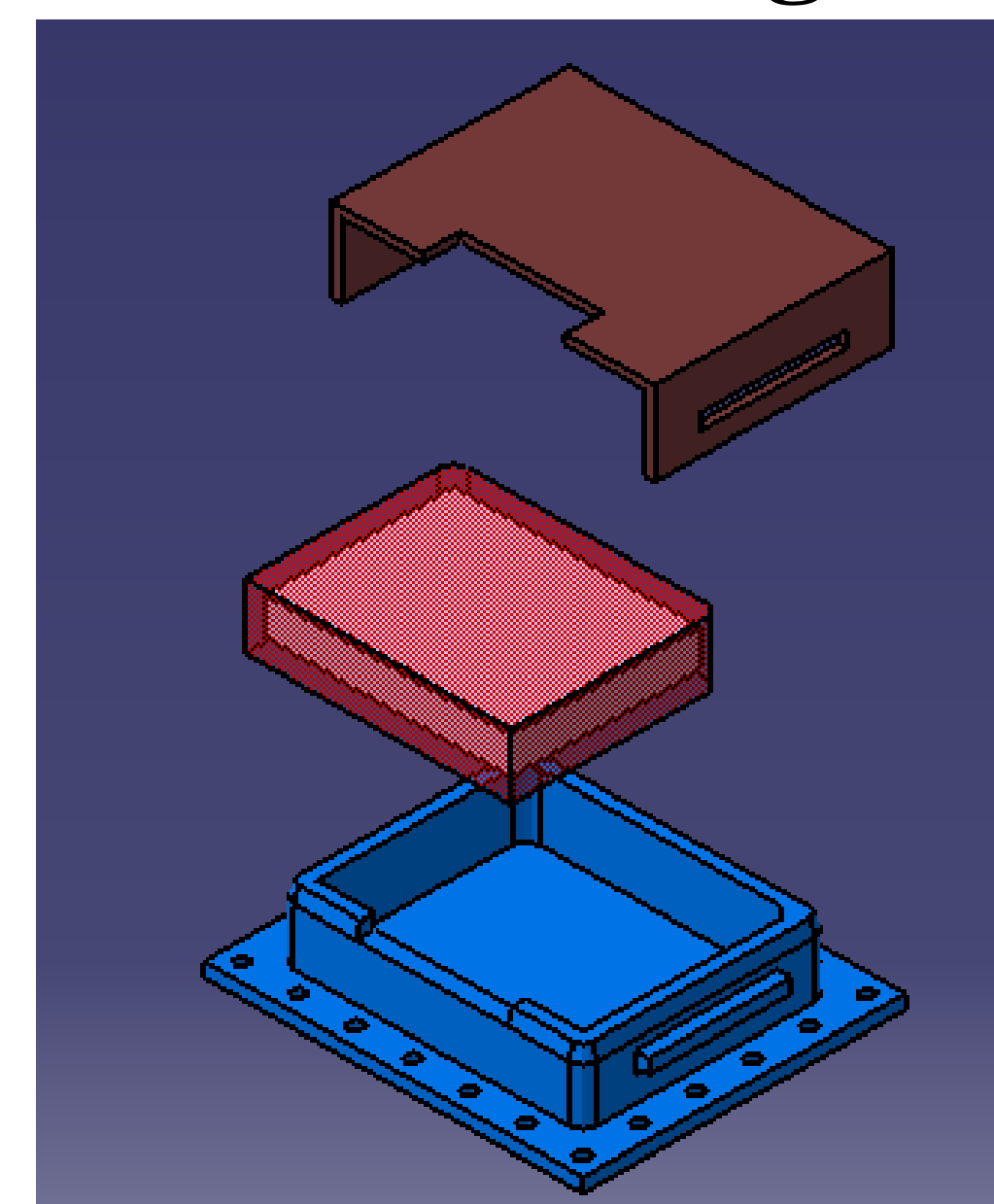
Customer Requirements	Products		
	Donjoy	Athos Active Gear	Our Design
Easy to wear	YES	YES	YES
Comfortable	YES	YES	YES
Light-weight	NO	YES	YES
Wireless Data Transmission	NO	YES	YES
Real-time visualization	NO	NO	YES
Long-term injury prevention	NO	NO	YES

Prototype

Control Unit

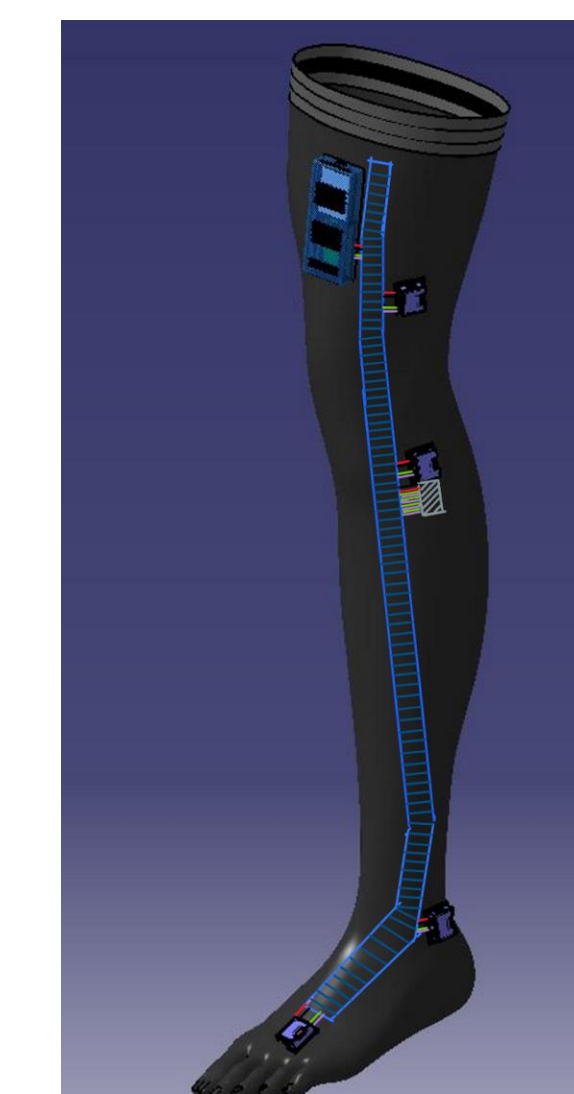


IMU Package

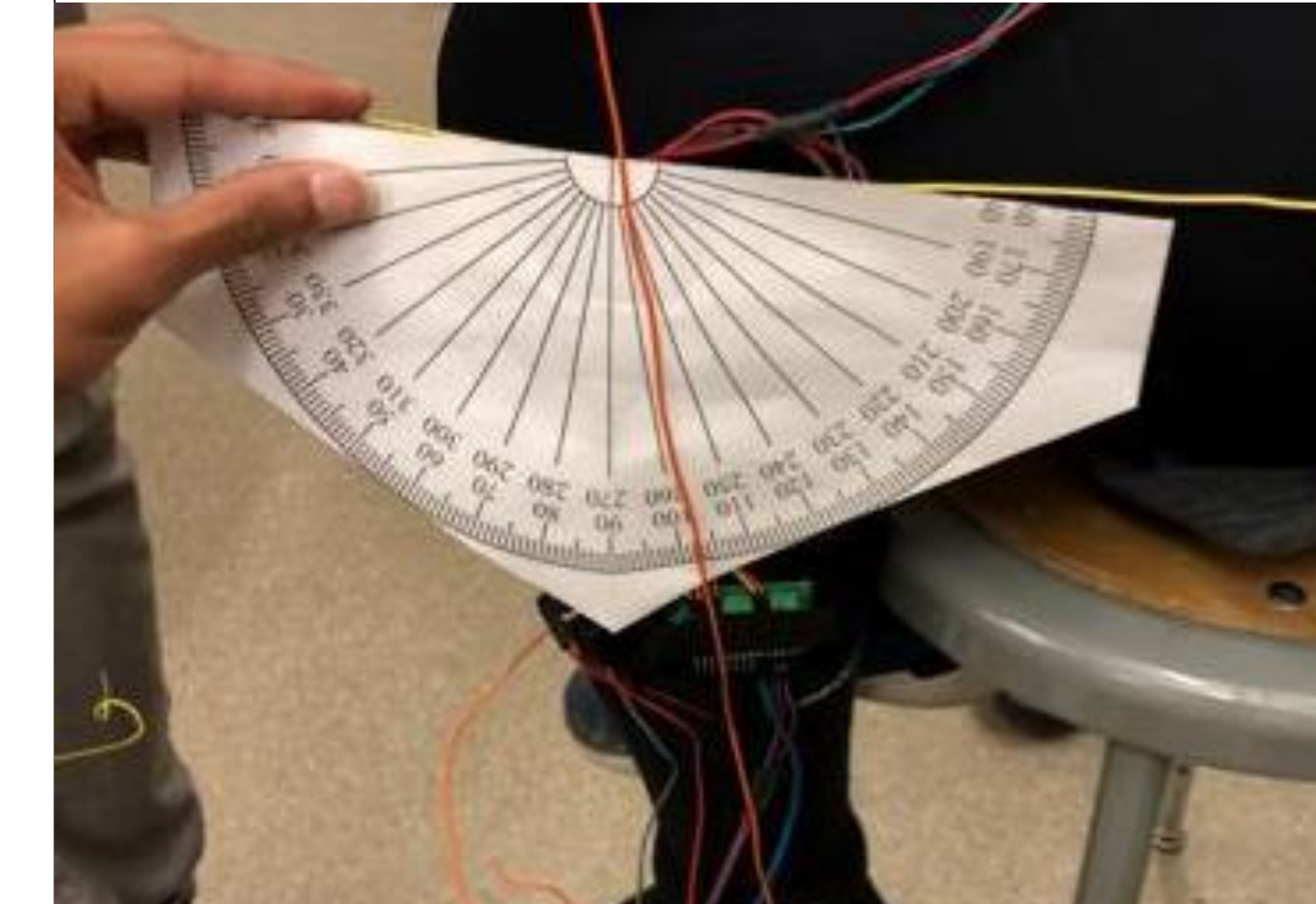


Design Specs and Features

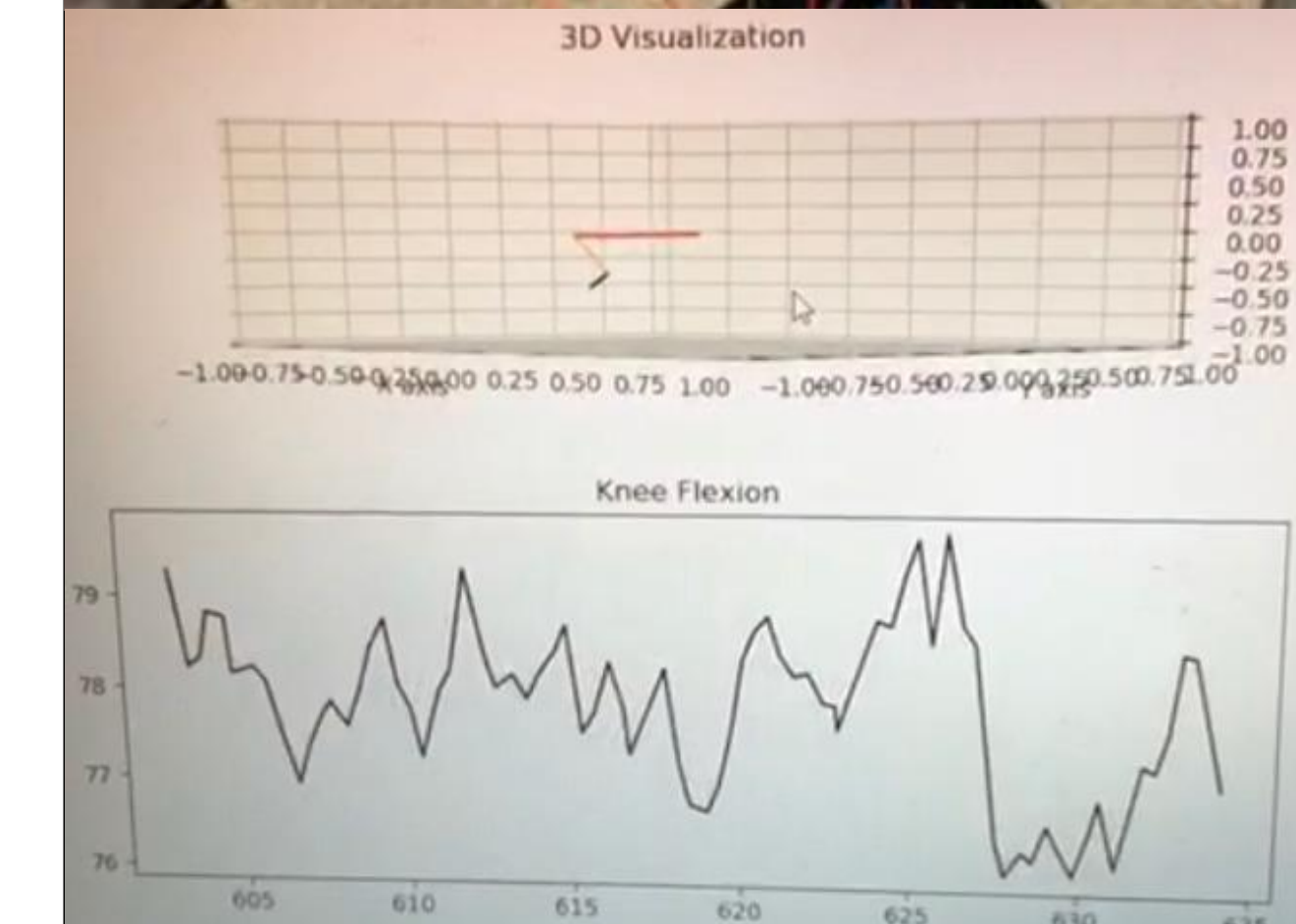
- Data transfer over Wi-Fi at 1 kbps.
- IMUs track rotation and acceleration of the leg at each point.
- 3D data visualization, showing real time movement and leg + spatial angles between knee/ankle joints.
- Rated for 4-hours of continuous use.



Product Testing Results

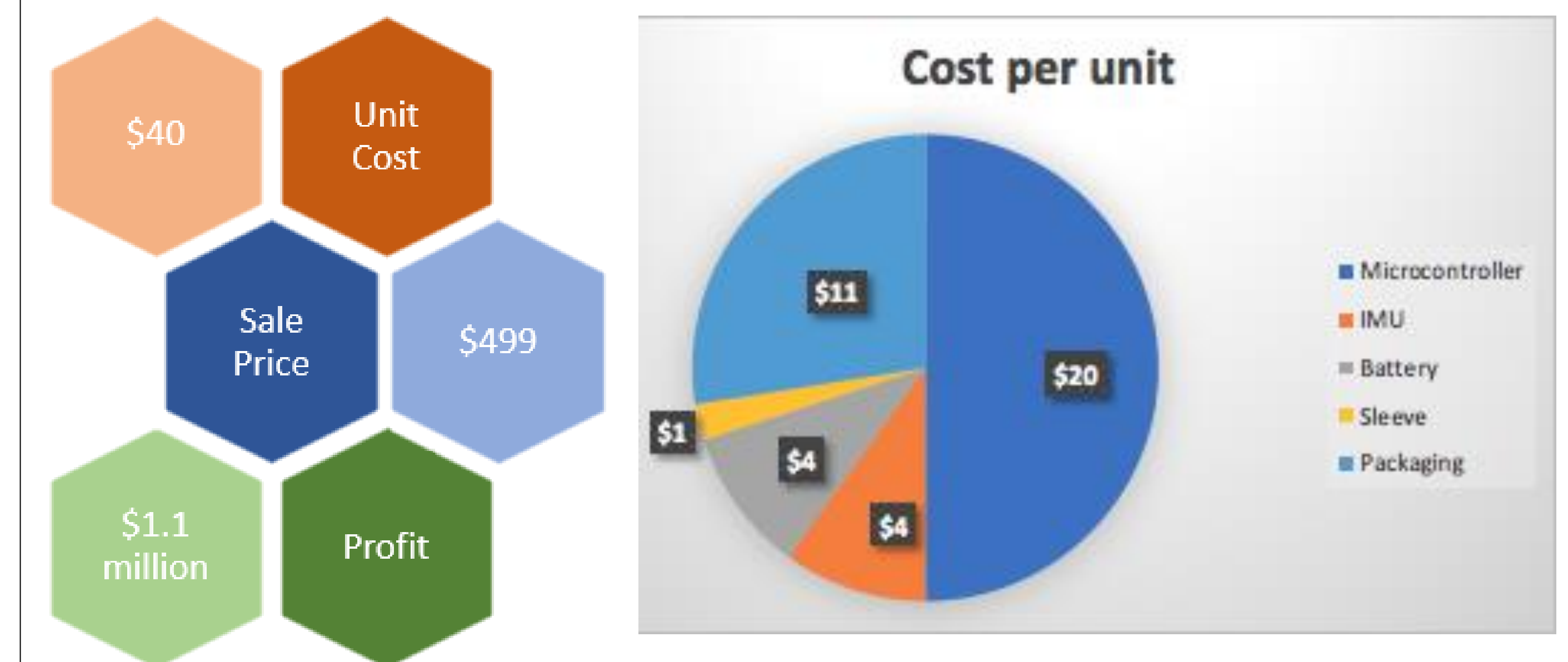


Critical Angles were determined using a printed protractor.



The real-time angles were compared to the determined angles and found to be within ± 1 degree.

Financial Analysis



Future Plans

- Develop a better UI.
- Build custom Microcontroller & Sleeve.
- Use printed circuits.