Technical

Walking Assistant

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| **Category** | **Data** | **Algorithm** | **Engineering Trade-off** | **Success Metric** |
| Walking Assistant | 1. Pressure Sensors data 2. Gyroscope / Orientation | Reinforced Learning can learn without expert supervision and problem does not have obvious solution as everyone walk differently.  E.g. if too much pressure at a certain point, it will try to alleviate by counterbalancing the pressure applied using hydraulic  The data can be used by physiotherapist to adjust the exercise in physiotherapy session | Requires power source such as battery for sensors, microchips, communication modules, hydraulics.  Needed a cloud server to do the computation and data storage.  It will have a significantly higher initial cost and maintenance cost. | Based on the increment in weekly prosthetics usage up till standard usage. |
| Emotional Support | 1. Text 2. Speech | Sentiment Analysis to extract the sentiment of Anne while she is communicating with the leg | In addition to above requirements, microphone, speaker and light for feedback. | Based on increment in positive input percentage from Anne |

<https://singularityhub.com/2009/08/27/bionic-limbs-with-artificial-intelligence/>

<https://www.analyticsvidhya.com/blog/2017/09/common-machine-learning-algorithms/>