Q: What devices?

A: Gyroscope, Accelerometer, Magnetometer

Q: Why RNN?

A:

1. Gyroscope measures the angular velocity, which has a temporal correlation with direction.

2. RNN is better than HMM or Partial Filter, on computation latency. Particle filter in MUSE can not even achieve real-time.

3. By introducing deep supervised learning, can we use collected ground truth to explore all kinds of human arm gesture possibility.

Q: Why DRL?

A: RNN may not be trained to be perfect (RNN初步实验之后即可得出结论). DRL helps refine the parameters of RNN by incorporates the three observations:

1. Gyroscope is accurate in short term.
2. 1
3. Human arm can only appear in limited positions.

By designing the reward of the DRL, can we teach the RNN network about these intuitions.

Q: Why do we need to estimate orientation and location jointly?

A: The ground truth of orientation can supervise the training of location, vise versa, the ground truth of location can also supervise the training of orientation. 对比“直接训练location”的方法以及“直接训练orientation”的方法，说明双边的ground truth可以参与到另一边的network updating中。比如在loss设计中给location乘以0，便可以只训练orientation，反过来同理。

Q: Kalman Filter

Q: When would RNN fail, so that we need DRL to refine RNN? Give examples, on the three observations

1. Gyroscope short term accuracy
3. Human arm limitation.

RNN ---> orientation

RNN ---> orientation + location

RNN + attention ---> orientation

RNN + attention ---> orientation + location