SPRINT 4

hardware finalization, orientation measurement, movement and lots of overtime

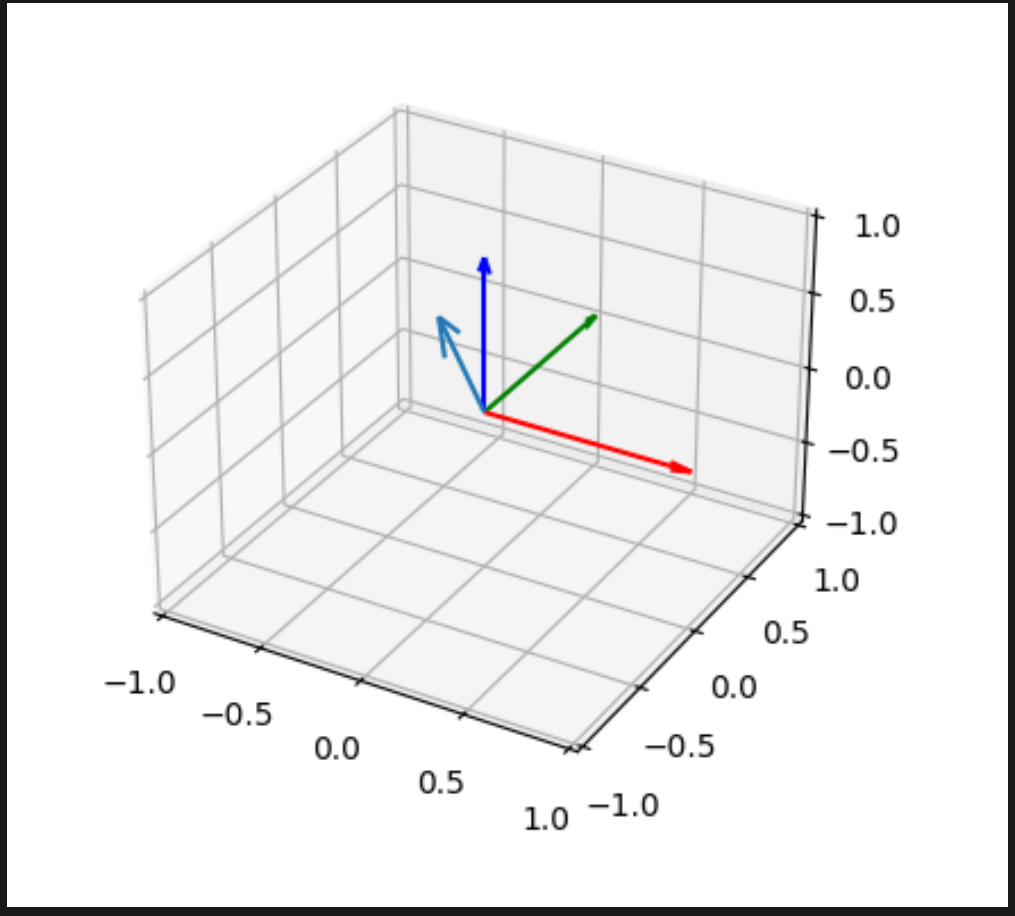
LAST WEEK

Time spent: 21.5h

What I learned

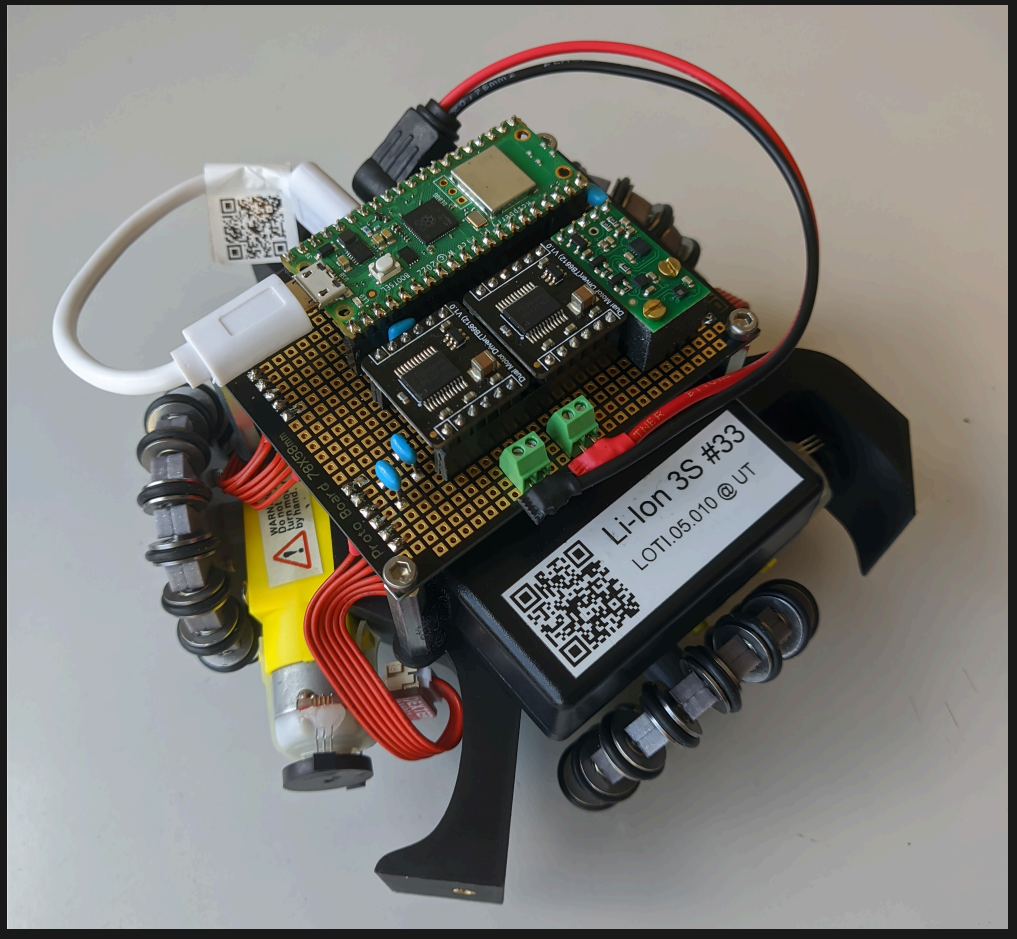
- much about soldering
- protoboards may have VCC/GND lanes...
- properly integrating angular velocity vectors

BIGGEST SUCCESS 1



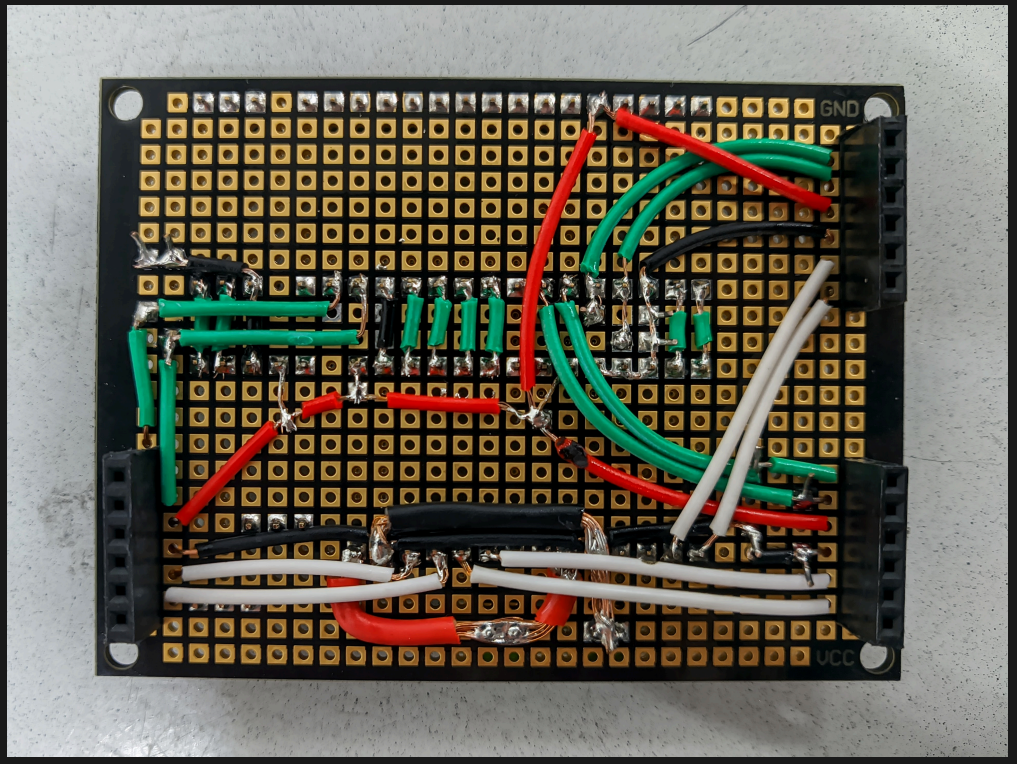
measuring absolute orientation works well

BIGGEST SUCCESS 2

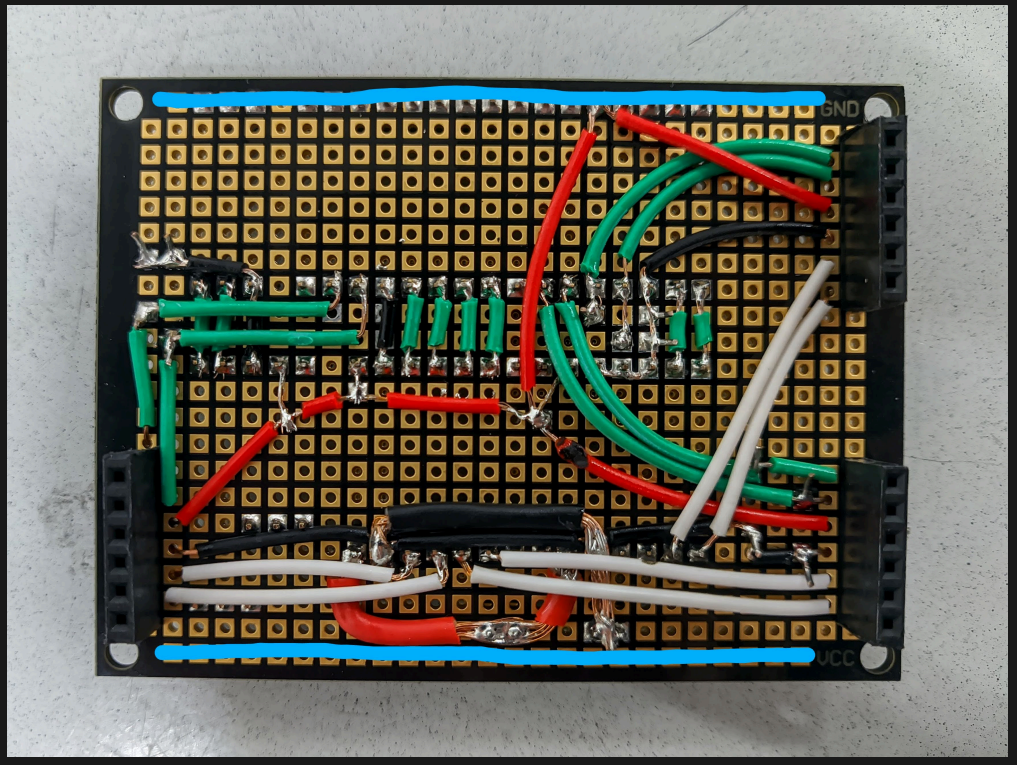


final hardware - but getting there was hard...

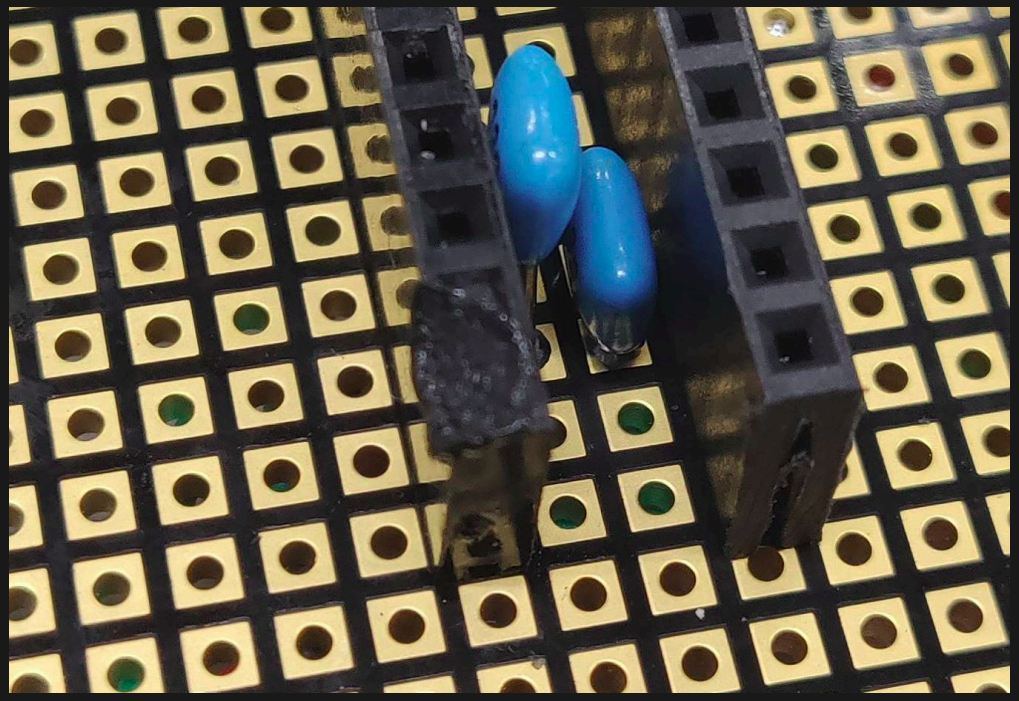
BIGGEST FAILURE



soldering protoboard took much longer than expected
but turned out nice...



...until I realised protoboard trolled me :/



...and I melted a pin header in the process of trying to fix it

but Jako helped me fix it ❤️

SPRINT OVERVIEW

- **Planned**:
  - 17 Cards
  - 33.5h
- **Current status**:
  - 16 Cards done, 1 card not finished
  - 51.5h 😅

TIME ESTIMATES

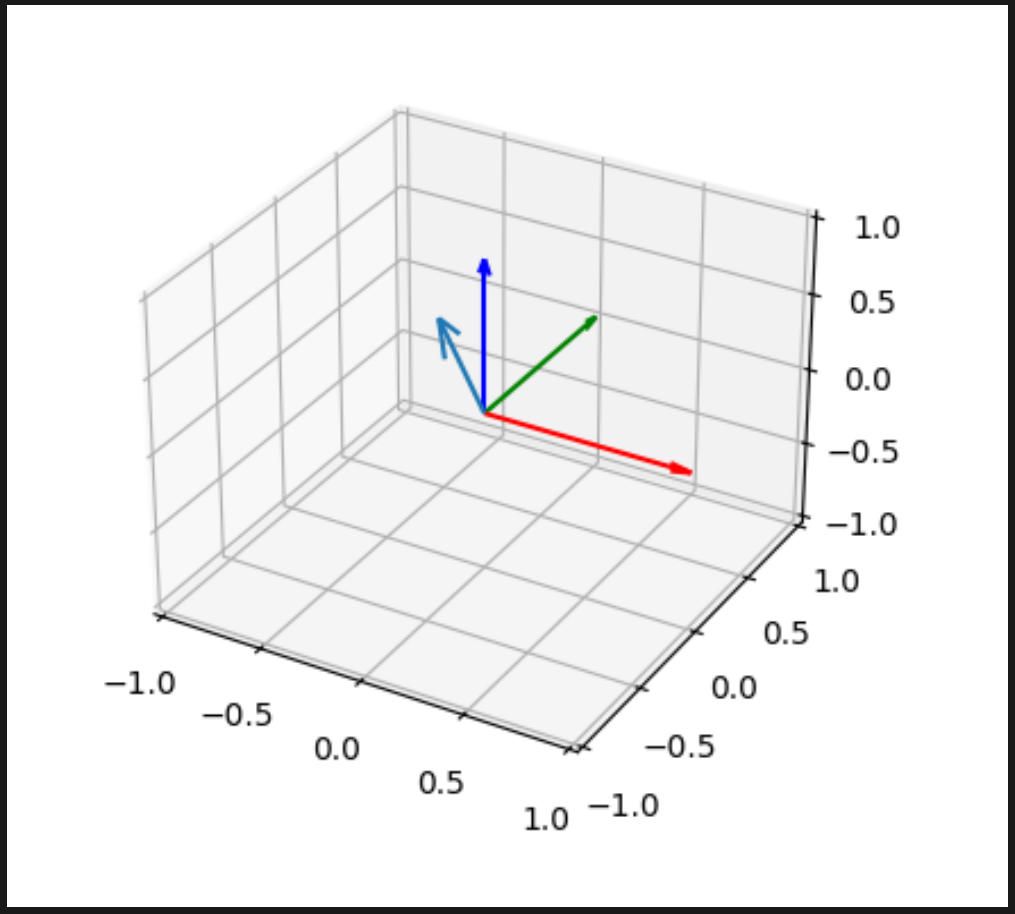
- 9 cards matched **exactly**
- 3 cards **+1h**
- 2 cards **-0.5 - -1.5h** (research)
- *Design Framework v3*: **3h -> 8h**
- *Connect IMU*: **1.5h -> 5h**
- *Solder Protoboard*: **2.5h -> 12h**

BEST CARDS

MAKE GAMEPAD CONTROL ROBOT

implementation was straightforward and result very satisfying

MEASURE ROBOT ORIENTATION



worked well and learned much

WORST CARDS

CONNECT IMU

- 4h instead of 1.5
- reasons:
  - overwhelmed by large interface
  - interface more low-level than expected

SOLDER PROTOBOARD

- Soldering took very long
- Made some non-easily fixable mistakes
- reasons:
  - **overconfidence** *(soldering pin headers worked well but wires are much harder)*
  - **missing experience** *(could have prevented overseeing ground rail and melting pin header)*

LAST SPRINT

will be though

- still have encoder issues
- IMU is not yet calibrated
- tuning PIDs can take indefinitely long