

1

make a **TRACE**

compare your physical robot to a representation of how it should work

is your robot build the same as your **drawings**?

does it match the **circuit diagram**?

are all the parts **connected** the way you expect?

does your code match your actual **pinout**?

is the **bill of materials** up to date?

does your code match your expected **control flow**?

do your functions match your expected **call graph**?



2

make a **MODEL**

**isolate your components
and test on their own**

does the **motor driver** work on its own?

do the **sensors** work on their own?

do your **mechanics** work without electronics?

does your sensor behave the same way in different **environments**?

what happens if you **combine** and isolate two sensors?

what happens if you use a **different microcontroller**?

what happens if you use **higher voltages**?



3

make a **MEASUREMENT** **MENT**

use tools to verify your
traces and models

does the **multimeter** show your components are connected?

is the **voltage drop** what you expected?

does the **serial monitor** show the expected output?

do your **timestamps** agree with your expected behaviour?

does a small **experiment** demonstrate the correct behaviour?

does a **video** show something that's hard to see in person?

can you verify that your **calibration** is correct?