

****WiggleBin: Run bio experiments with Raspberry PI HQ camera + tracking and analysis tools****

****Challenge Description:****

The WiggleBin started as a simple project to monitor the temperature of a vermicomposting bin, with the objective to keep conditions for our composting worms optimal. This turned into a project on tracking worm movements using a Raspberry HQ camera and OpenCV. The next challenge is the following; can the WiggleBin become a useful tool in a (diy) bio lab environment for running experiments?

****Objectives:****

Find out what the current solutions are in bio labs for video monitoring?
Analyse what the contribution of WiggleBin could be?
Built hardware which can be easily created and setup
Built software (Jupyter notebooks, GUI, etc) to support researchers - probably the first goal would be movement tracking

****Scope:****

One of the following:
User research
System which can be created (in a FabLab) and installed within 2 hours
Jupyter notebook which retrieves data and provides tools for analysis (specifically on movement tracking)
Running multiple WiggleBins at a time for A/B tests and multiple independent tests

****Resources and Materials:****

<https://github.com/studiorabota/wiggle-bin>

****Expected Deliverables:****

One of the following:
Hardware prototype which can run at least one experiment
Software to track movement over time

****Mentorship and Support:****

I can provide mentorship and support with software development, design and user research.

****Prerequisites:****

It would be great to have someone with experience in research and or biology (or science in general). Basic knowledge of Python would also be helpful.

****Benefits of Participation:****

Great learning experience for both of us :).
Fun project to learn coding.
Gather some experience in prototyping and design.

****Location and Availability:****

I live in Rotterdam and work in Delft (campus). Friday is usually my project day, Sunday is also possible.

****About You:****

I'm a professional web-developer and designer, with UX experience. Next to this I have some experience with Python, basic electronics, software such as Fusion 360 and tools in FabLab such as 3D printers and laser cutters.

****Contact Information:****

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