Time planning thesis work – Love Arreborn, Nadim Lakrouz

The plan below is a loose plan for out thesis work.

Week 14

- Planning seminar 1/4
- Potentially book a meeting with the customer for ADC discussion / order
- Finalize setting up development environment

Week 15

NOTE: At some point before the half time seminar, we should get access to the ADC and should be able to attempt connecting the ADC to the live equipment and get real samples. As it's difficult to say exactly when the ADC is delivered and how much effort it will take to interface with the OQRNG-device, it's hard to say when we'll work on this. Assume that work before the corresponding deadline will be added.

- Proceed with first iteration, or the baseline (naive) implementation, potentially run it on local hardware first before deployment to MCU
- Generate some first instances of test data (at least one set of test data is needed at this point)
- If time allows, deploy naive implementation on MCU and set up time measurement code
- If not, test the baseline on local hardware with generated test data to verify functionality
- Investigate feasibility of ESP32

Week 16

NOTE: To consider an iteration complete at this point (e.g. when it's to be finalized) the code should be deployed to Teensy 4.1 and time should be measured

- **DEADLINE**: Naive implementation deployed on MCU and time measurement set up
- **DEADLINE**: Sets of test data finalized
- Proceed with second iteration (e.g. efficient data structures)
- Create and populate external document with test results (to be filled with all coming iterations)
- Investigate feasibility of Pico 2

Week 17

- **DEADLINE**: Finalize second iteration

- **DEADLINE**: Decide whether ESP32 and Pico 2 are viable candidates for comparison (to allow for time to solder parts)
- Proceed with third iteration (e.g. bitshifting)
- **DEADLINE**: Preparation for half time seminar

Week 18

- Half time seminar 30/4
- **DEADLINE**: Finalize third iteration
- **DEADLINE**: Teensy 4.1 connected to OQRNG-device to sample real data
  - *NOTE*: This heavily depends on when the ADC is delivered, but should be done here at the latest!
- Extra time alloted for finishing up trailing tasks

Week 19

- Proceed with fourth iteration (e.g. batching)
- **DEADLINE**: Go over potential feedback from half time seminar, adjust content accordingly

Week 20

NOTE: At this stage, we should have four iterations completed that (theoretically) should be MCU agnostic, which we can then deply to other MCUs as well. As the last iteration is **not** hardware agnostic, this is the iteration that might not be deployed to all MCUs as this requires a full rewrite of all code.

- **DEADLINE**: Finalize fourth iteration
- **HARD DEADLINE**: Iterations 1 - 4 finalized!
- Begin work of deploying iterations 1 - 4 on the MCUs that were deemed feasible
- Begin rewrite of code for Teensy 4.1 for the fifth iteration (e.g. ARM hardware instructions)
  - *NOTE*: The ARM instructions, e.g. the fifth iteration, might be too time consuming to actually finish. It's hard to know beforehand whether this is the case.

Week 21

- Begin fifth iteration (e.g. ARM hardware instructions – *NOTE*: This iteration may be too time consuming, and we will have to investigate the feasibility of this during the project)
- Begin preparation for opposition presentation
- Connect Teensy 4.1 to OQRNG-device and operate on real data

Week 22

- **DEADLINE**: Deploy iterations 1 - 4 on weaker MCUs (e.g. ESP, Pico) and summarize results in our table
- Opposition presentation 28/5
- Begin work on opposition feedback as soon as possible after the seminar
- **DEADLINE**: Fifth iteration finalized

Week 23

- **HARD DEADLINE**: All iterations should be finalized on all MCUs during this week!
- **DEADLINE**: Opposition comments should be adjusted at the end of this week
- Prepare for final presentation

Week 24

- Exact work that needs to be done before the final presentation is a bit vague, and will be populated over time as we realize what needs to be finished before the final presentation
- Final presentation 10/6
- **DEADLINE 13/6**: Finalize report for publishing

Week 25

- **HARD DEADLINE 16/6**: Publishing
- **DEADLINE 17/6**: Reflection document