

wa-hls4ml (surrogate model) updates

Meeting notes

Indico: <https://indico.fnal.gov/category/1594>

Zoom: <https://fnal.zoom.us/j/95870249466?pwd=VDdhViszcTF4R2FEUVUrS1EyVFRYZz09>

March 1, 2024

Notes:

- Discussion on relational DB vs. MongoDB
 - Relational DB enforces some discipline that in the longer term may be better than the flexibility of MongoDB
 - Vladimir will refactor the previous draft of the DB [schema](#)
 - E.g., separate table for HLS tools, etc
 - Discussion on containers, Xilinx tools, Kubernetes
 - Vladimir may share with Ben some previous experiences at CERN

Action items:

- Reschedule the next occurrences
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March 29, 2024

Notes:

- Maksymilian Graczyk's presentation on his thesis
 - Machine learning for performance estimation of hls4ml on-chip neural network implementations
- Chang Sun's current updates on the surrogate model
- Ben Hawk's updates on deployment and surrogate model for codegen/resource estimation

Action items:

- ~~Vladimir will refactor the previous draft of the DB~~
 - ~~John Graham offers help for the deployment of the containers (there will be offline chats)~~
 - ~~Ben will present next time his slides~~
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April 5, 2024

Notes:

- Short meeting

Action items:

- ~~Vladimir will refactor the previous draft of the DB~~
 - ~~John Graham offers help for the deployment of the containers (there will be offline chats)~~
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April 19, 2024

Notes:

- Summary of the current schemas for a database that would support the surrogate model training
 - We had a first schema and example specifically [targeting hls4ml](#)
 - Vladimir is working on a more agnostic database that can be more flexible (see [db4hls](#))
 - A view would provide support for hls4ml
- John G. and Mohammad A.W. presentation on [cloud infrastructure](#)

Action items:

- ~~Vladimir will refactor the previous draft of the DB~~
 - ~~Contact John for a test demo~~
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May 03, 2024

Notes:

- John presented
 - <https://h2o.ai/platform/open-source-gpt-and-llm-studio>
- Vladimir's updates on the new database
- Giuseppe's updates on a [systematic exploration of layers with hls4ml and Catapult](#)

Action items:

- ~~Vladimir will refactor the previous draft of the DB~~
 - ~~Contact John for a test demo~~
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May 17, 2024

Notes:

- Ben Hawk's updates on deployment and surrogate model for codegen/resource estimation

Action items:

- Vladimir will refactor the previous draft of the DB
- Contact John for a test demo