Analysis Preservation Mini-bootcamp

Sam Meehan, Lukas Heinrich
and (maybe/hopefully) Savannah Thais
16 September 2019
Ideas

● **Goal #1: Educational Aim**
  ○ Analysis preservation is/should become more important to the community
  ○ This would seem to fall under some part of the IRIS-HEP mandate

● **Goal #2: Logistical Aim**
  ○ Can we reuse modules in a plug and play manner with SWC layout (i.e. like the Git one)?
  ○ How “inter-experimental” can we create our training sessions?
    ■ If the timescale is too short, then we would make this an “ATLAS only” focused event but develop the materials just as well

IRIS-HEP will serve as an active center for software R&D, function as an intellectual hub for the larger community-wide software R&D efforts, and transform the operational services required to ensure the success of the HL-LHC scientific program. Three high-impact R&D areas will leverage the talents of the U.S. university community:

- development of innovative algorithms for data reconstruction and triggering;
- development of highly performant analysis systems that reduce ‘time-to-insight’ and maximize the HL-LHC physics potential; and
- development of data organization, management and access systems for the community’s upcoming Exabyte era.
Proposal

- 2 day bootcamp at CERN
  - Day 1: Docker and containerization
  - Evening 1: Organized bootcamp dinner
    - Makes this a “real thing” with presence/commitment to being there
  - Day 2: Yadage and workflows

- Format
  - Mornings: Experiment agnostic
    - Focused on toy MC to ensure no collaboration issues?
  - Afternoons: Experiment specific
    - Limited to ATLAS/CMS to keep scope narrow for first attempt

- Audience
  - Assumptions
    - They are proficient in python, c++, and Git (e.g. rebasing, detached heads, submodules, CI/CD) ➔ Develop a HEP-centric SWC for Git to ensure certain skills are in place
    - They know how a standard analysis workflow is pieced together
  - Limit to 30 people ➔ 6 instructors

- Cost: **1000 CHF** will allow for refreshments and dinner (food) would be covered
A lot of content already exists and can be extracted from August LBNL event:
- Thursday morning ➔ Day 1 morning (basically copy/paste but with some smoothing)
- Thursday afternoon ➔ Day 2 morning (requires considerable reworking but is a solid starting point)

---

### Schedule

**Monday**
- Git [Kelly/Kunai]
- Lunch
- ATLAS-Git [Dan]
- Jupiter Pizza

**Tuesday**
- CMake [Henry]
- Lunch
- ATLAS-CMake [Karol]

**Wednesday**
- Testing/CI [Kelly/Kunai]
- Lunch
- ATLAS-CI/CD [Giordon]
- Cultural Event: Berkeley Bowl

**Thursday**
- Docker [Matthew]
- Lunch
- ATLAS-Recast [Danika]
- Career Panel: Send questions!
- Dinner: 19:30 @ Great China

**Friday**
- Deep Learning
- Documentation
- Machine Learning
- Robot Frames
- Event
- Free/Worktime

---

### This Bootcamp

#### Day 1
- Docker [ATLAS+CMS]
- Lunch
- ATLAS
- CMS
- Dinner

#### Day 2
- Yadage Workflows [ATLAS+CMS]
- Lunch
- ATLAS
- CMS
- Dinner