US-ATLAS / Canada ATLAS Computing Bootcamp: Discord for Remote Workshops

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Virtual Meeting on Virtual Meetings Blueprint Workshop
May 5th, 2021

- ▶ Focus
  - ▶ Educate **newcomers** to ATLAS, in particular graduate students, on core technical computing concepts and tools used within ATLAS and more widely in HEP
- ▶ Covered
  - ▶ Version control with Git
  - ▶ Use of CERN's Enterprise Edition version of GitLab
  - ▶ Building software with CMake and ATLAS CMake
  - ▶ Containerization with Docker
  - ▶ Continuous integration of code and delivery of analysis software with GitLab Pipelines
  - ▶ Analysis preservation & reinterpretation w/ RECAST
  - ▶ Fundamentals of machine learning
 - ▶ Sustainable software development
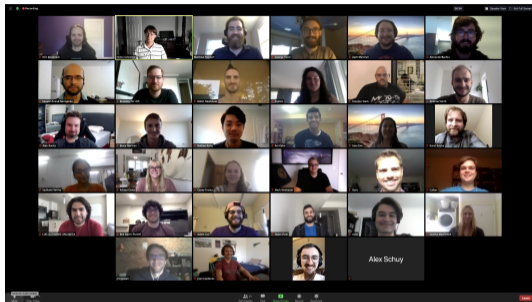
Held remotely on Discord from August 24th - 28th with 44 attendees participating

Many thanks to the instructor team for making this training event so successful!

Generous support from the US ATLAS Center allowed for the event to be **free** and **fully captioned**

Discord Servers

- ▶ 2020 Bootcamp originally planned to be at LBNL. COVID-19 caused a merging with the Canada-ATLAS for this joint Bootcamp

- ▶ Decided to create a Discord server for the Bootcamp

- ▶ Scheduled instruction and discussion continued live and asynchronously outside of scheduled time

- ▶ This worked really well! Low friction ability for instructional team to breakout to separate room to help students with questions and then rejoin
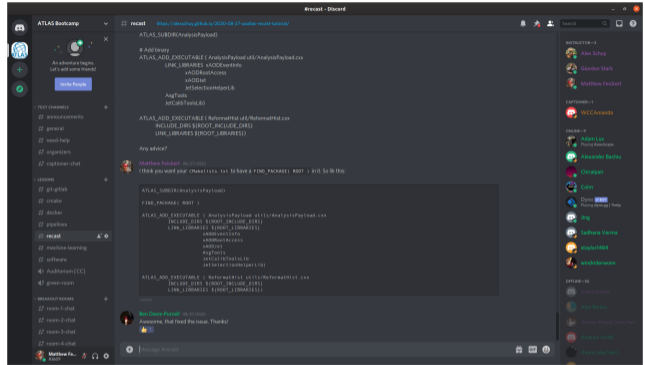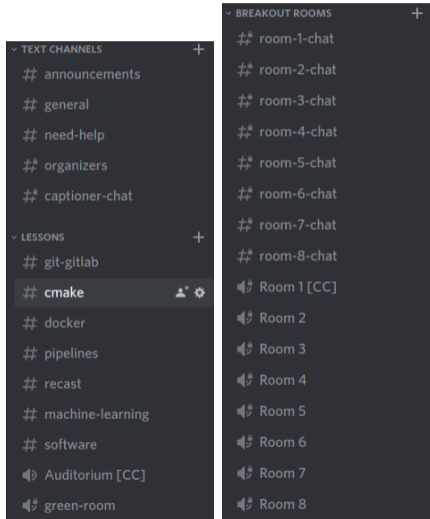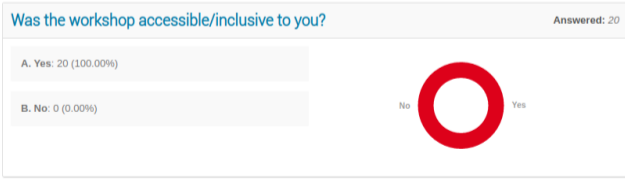
- ▶ Much more mature platform for online collaborative interactions
- ▶ Effectively combines video, archival chat with markup, breakout rooms, responsive polling (so replaces Zoom, Mattermost, Slido)
- ▶ Everyone can stay in an audio channel and switch between text channels without losing the audio/stream
  - ▶ Better imitates what an in-person bootcamp is like
- ▶ Allows for unrestricted movement between main Auditorium and Breakout Rooms
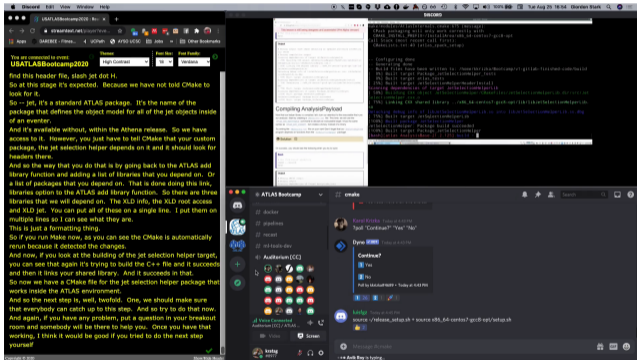
- ▶ Individual text channels for each module in the curriculum
- ▶ Text and video breakout rooms per instructional pod for clear discussions
- ▶ Along with captioners, helped make the bootcamp more accessible for everyone

Was the workshop accessible/inclusive to you?   Answered: 20

A. **Yes**: 20 (100.00%)

B. **No**: 0 (0.00%)

No   Yes

BREAKOUT ROOMS   +
room-1-chat
room-2-chat
room-3-chat
room-4-chat
room-5-chat
room-6-chat
room-7-chat
room-8-chat
🔊 Room 1 [CC]
🔊 Room 2
🔊 Room 3
🔊 Room 4
🔊 Room 5
🔊 Room 6
🔊 Room 7
🔊 Room 8

TEXT CHANNELS   +
announcements
general
need-help
organizers
captioner-chat
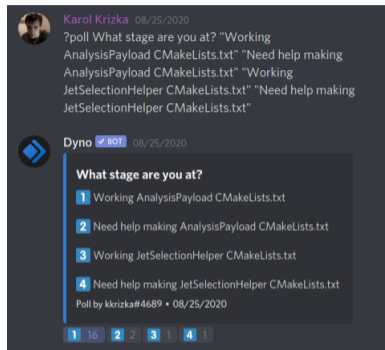
LESSONS   +
git-gitlab
cmake
docker
pipelines
recast
machine-learning
software
🔊 Auditorium [CC]
🔊 green-room

Interactive polling

- Discord is designed to be extensible and has a rich plugin ecosystem
  - Dyno is a customizable bot for dashboarding, moderation, and interaction
- Instructors were able to use Dyno to make live interactive polls on the fly in module chat
  - Increased interaction and helped keep pace at right level
- While not as rich as the GitLab flavored Markdown of Mattermost, Discord does also support Markdown
  - Makes for far better text interaction than Zoom

- The bootcamp is a **public and persistent resource** — you can still go and run through all the material today
- The Discord server is still live too with all Bootcamp content
- In keeping with the excellent work being done for the HSF's Training Cirriculum
- Designed around the software taught in a similar manner to good software documentation:
  - Public
  - Versioned
  - Specified requirements and dependencies

Code of Conduct

Everyone who participates in activities related to the Bootcamp is required to conform to the Code of Conduct.

Report a Code of Conduct Incident

Schedule

Monday

09:40 (UTC-5)	Welcome
10:00 (UTC-5)	Introduction to Git, Getting started with GitHub
13:00 (UTC-5)	Lunch Break
14:00 (UTC-5)	ATLAS-GitLab

Tuesday

10:00 (UTC-5)	Building Code with CMake
13:00 (UTC-5)	Lunch Break
14:00 (UTC-5)	ATLAS-CMake

Wednesday

010:00 (UTC-5)	Containerization with Docker
13:00 (UTC-5)	Lunch Break
14:00 (UTC-5)	GitLab Pipelines

Thursday

010:00 (UTC-5)	RECAST and Analysis Preservation
13:00 (UTC-5)	Lunch Break
14:00 (UTC-5)	RECAST and Analysis Preservation

Friday

Module 1	Introduction to Machine Learning
Module 2	Sustainable Software Development

All modules and resources on the agenda are live and functional in 2021

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N.B.: Items don't carry equal weight

- **Pros:**
  - Far better **experience of interaction** that Zoom or Vidyo
  - Usefulness can extend beyond a workshop better than a Mattermost team
  - Mature and stable product
    - Global usage stats: Over 250 million users as of 2019
  - Fully cross-platform: Windows, MacOS, Linux, iOS, Android, web browser
  - Video streaming that actually has **Markdown support for chat**
  - Provides **tooling to create own bots for your needs**

- **Cons:**
  - Free tier has limited video streaming quality (though we paid $10 for 1 month and got better quality video than Zoom)
  - Free tier has limited number of simultaneous video streams (had to switch to Zoom for group photo)
  - **Self hosting servers currently not supported** (Mattermost can be self hosted, though Zoom cannot)
  - Data privacy not necessarily better than Zoom's (c.f. Mozilla Foundation report though passes minimum standards)
  - **In-platform video recording not supported** (assumes you're using OBS)

N.B.: Items don't carry equal weight
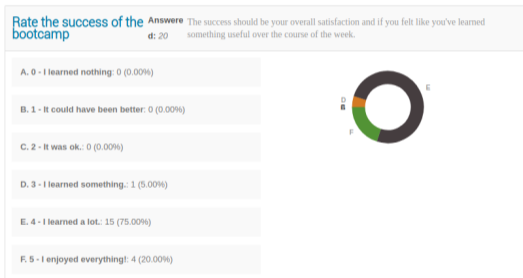
- ▶ **Pros:**
  - ▶ Breakout rooms (that have easy switching) allow for instructors and students to be able to talk without interfering with ongoing instruction
    - ▶ Allow for multiple students with the same problem to receive clear instruction from instructor simultaneously
    - ▶ Instructors can screen share too
  - ▶ No travel meant that **all** applicants to the bootcamp were accepted and opportunity to attend became **more equal**
    - ▶ This Bootcamp was targeted at North America, so doesn't solve global timezone problems

- ▶ **Cons:**
  - ▶ Still easier to debug with a student while sitting next to them then screen sharing
  - ▶ Social interactions of past bootcamps **not replicated well at all**
    - ▶ After being on a video call all day people do not want to navigate a social discussion on a video call
  - ▶ Most of the benefits of Discord are **not limited to people being remote**
    - ▶ Can use Discord as component of in-person workshops
    - ▶ Captioning should be provided for in-person workshops
  - ▶ Opportunity to connect does not mean equity in participation

Personal view: Successful remote bootcamp, but would do in-person again with Discord as added tool

Summary

▶ Discord is **designed to be a platform for communities**. Helpful to think on "What is the right tool for the right job?". (Discord for workshops, Zoom for meetings?)

▶ Discord allowed for all interactions to happen on **one platform**. Helped keep the bootcamp focused and not overwhelm people with application fatigue.

▶ The ability to switch seamlessly between main talk and breakout room video streams **facilitated instructor and student interactions**

▶ Allowed for a more **inclusive and accessible** remote bootcamp, though missing video built in video recording

Rate the success of the bootcamp **Answered: 20** The success should be your overall satisfaction and if you felt like you've learned something useful over the course of the week.

A. 0 - I learned nothing: 0 (0.00%)

B. 1 - It could have been better: 0 (0.00%)

C. 2 - It was ok.: 0 (0.00%)

D. 3 - I learned something.: 1 (5.00%)

E. 4 - I learned a lot.: 15 (75.00%)

F. 5 - I enjoyed everything!: 4 (20.00%)

Thank You to the Instructor Team!

- ▶ Matthew Feickert (University of Illinois at Urbana-Champaign)
- ▶ Giordon Stark (University of California Santa Cruz SCIPP)
- ▶ Elizabeth Wickes (University of Illinois at Urbana-Champaign, Software Carpentry)
- ▶ Karol Krizka (Lawrence Berkeley National Lab)
- ▶ Justin Chiu (University of Victoria)
- ▶ Luke Polson (University of Victoria)
- ▶ Amber Roepe (University of Oklahoma)
- ▶ Henry Schreiner (Princeton University, IRIS-HEP)
- ▶ Adam Parker (California State University)
- ▶ Nils Krumnack (Iowa State University)
- ▶ Danika MacDonell (University of Victoria)
- ▶ Bingxuan Liu (Simon Fraser University)
- ▶ Alex Schuy (University of Washington)
- ▶ Robin Newhouse (University of British Columbia)