
DTU

07/12/23

Real-Time Visual and Machine Learning Systems

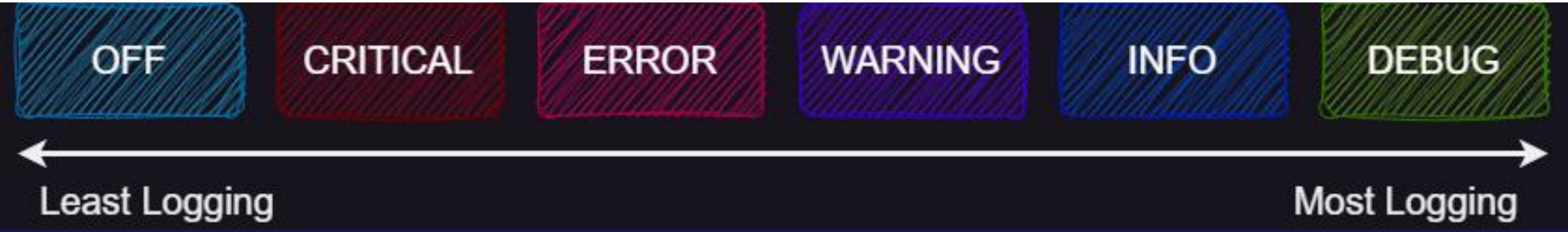
Real-Time Systems

- GPU Hand-in
  - Any Questions?
  - Common problems?
    - Bind groups and unused elements
- Analysis Hand-in
  - Any Questions?
- Projects
  - Any Questions?

Real-Time Systems - Logging

- Logging, sort of like print statements, but systematic and consistent!
- You can use a crate like logging

- Image credit



Real-Time Systems – Config files

- Instead of encoding your runtime variables in your code and recompiling every time you make an adjustment, use a config file
- Give the path to the config file as a runtime argument for your application
- Allows you to have multiple configurations and play around with reduced compile times
- You can use a library like confy

Real-Time Systems – Events and GUI

- Look at code!

Real-Time Systems – Sensor Input and Interaction

- Webcam
  – Are you handling the input directly on the GPU or are you transferring to and from?
- Microphone
- Keyboard/Mouse

Real-Time Systems – Profiling

- Does everyone know how to time code and profile using systems monitor and the relevant profilers?

How do we do this?

- Support when and where
- We need to agree on your project today before you leave

How do we do this?

- Start loading the same data every time
- Do a single threaded implementation which implements all the basic features you want
- Can you get sensor input or interaction in there?
- Once your system is feature complete, describe the features and the project in markdown for your hand-in. This will be your base implementation
- From then on loop between profiling -> implementation -> profiling -> writing down until you are done or ready to add more features
- Consider whether you can speed up your system using preprocessing, such as a more quantized or pruned model, or sorting and compressing data