C++ Club UK Meeting 124

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Library: VirtualMultiArray

Multi graphics card based C++ virtual array implementation that uses OpenCL just for the data transfers on PCle bridge.

- GitHub
- Wiki
- Reddit

Library: Reference Views

rviews (reference views) is a header-only C++17 library that allows viewing an STL container via another STL container with Ivalue semantics. E.g. you could view a list as it would be a vector, or even as it would be a map, or even both.

```
1 std::list<char> data{'a', 'b', 'c'};
2 vector_view view{data};
3 std::cout << view[0] << std::endl; // a
4 std::cout << view[1] << std::endl; // b
5 std::cout << view[2] << std::endl; // c</pre>
```

- GitHub
 - Reddit
 - See also: Vista
 - See also: Boost flat_map

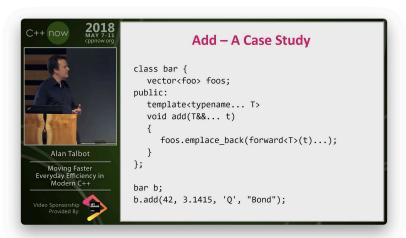
Library: Asio-chan

This library provides golang-inspired channel types to be used with ASIO awaitable coroutines. Channels allow bidirectional message passing and synchronization between coroutines.

- GitHub (C++20, MIT)
 - Reddit

Moving Faster: Everyday Efficiency in Modern C++

- C++Now 2018, YouTube
 - Reddit



Why no standard library support for command line parsing?

- Reddit
 - P0781R0 A Modern C++ Signature for main
 - TCLAP Templatized Command Line Argument Parser: SourceForge, GitHub
 - Gflags, GitHub
 - Cxxopts
 - CLI11
 - Boost.Program_options
 - Quick Arg Parser: GitHub, Reddit
 - Lvra
 - Clara, blog post by Marius Bancila

```
1 std::vector<std::string_view> args(argv, argv+argc);
```

Number Parsing at a Gigabyte per Second

- Daniel Lemire
 - Paper
 - Reddit
 - fast_float (GitHub)
 - The Eisel-Lemire ParseNumberF64 Algorithm
 - Go Systems talk (YouTube)

std::jthread and cooperative cancellation with stop token

- Article on Nextptr
 - Reddit

Time Travel Debugging for C/C++

- Article
 - Reddit

Abbreviated Function Templates and Constrained Auto

- Sy Brand, Microsoft
 - Reddit

Library: C++20 container concepts

This library aims to provide general purpose concepts that are not available in the C++20 concepts library, most notably container concepts.

- GitHub
 - Reddit

Coderrect Scanner

A fast static analysis tool for detecting race conditions in C++ code. Supports pthreads, std::thread, OpenMP, and more.

- Home Page
 - Reddit

Library: Fixed math (header-only, MIT)

- Reddit
 - GitHub (C++17, MIT)

Scientific computing in C++

Reddit

Libraries

- Eigen
- Blaze
- Boost uBLAS
- PETSc

Documenting C++ code

- Reddit
 - Doxygen, Sphinx + Breathe ⇒ {fmt}
 - Standardese
 - clang-doc
 - hdoc
 - Adobe Hyde

CMake and the Future of C++ Package Management

- Borislav Stanimirov
 - Reddit

Motivating examples of coroutines

- Reddit
- Previously: Reddit

Creativity

Ken Demarest

20 Aug 2009 at 8:50 am PST



Back on Wing Commander 1 we were getting an exception from our EMM386 memory manager when we exited the game. We'd clear the screen and a single line would print out, something like "EMM386" Memory manager error. Blah blah blah." We had to ship ASAP. So I hex edited the error in the memory manager itself to read "Thank you for playing Wing Commander."