

CPPCON 2019 TRIP REPORT

St. Louis C++ Meetup

November 13, 2019

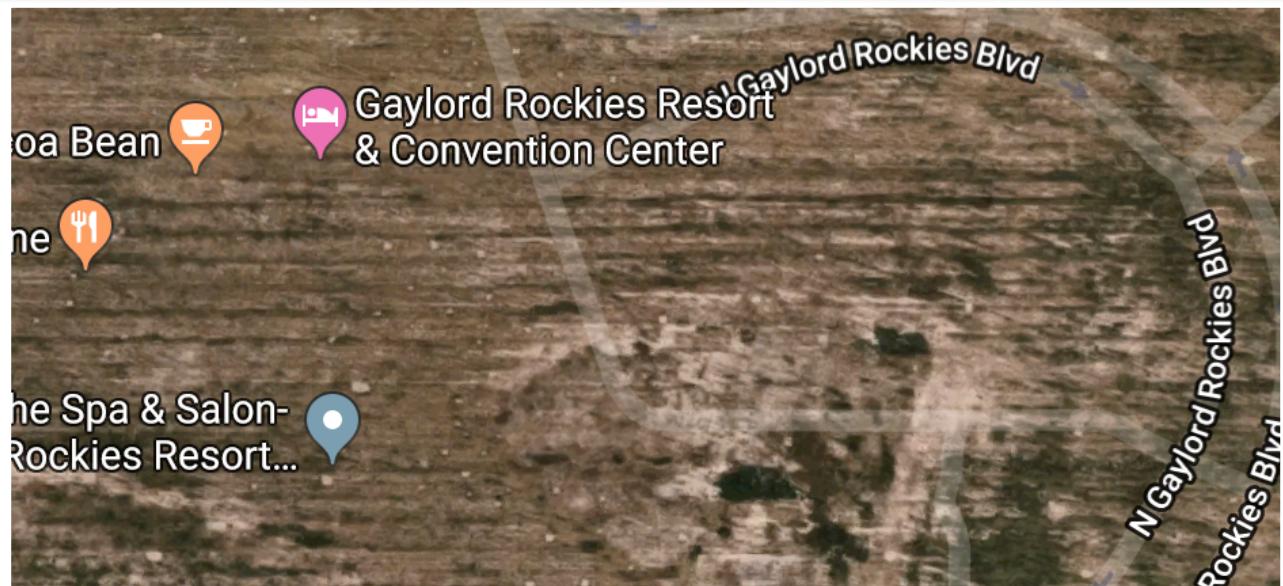
John Fultz

Gaylord Rockies, Denver Colorado



Brand new construction

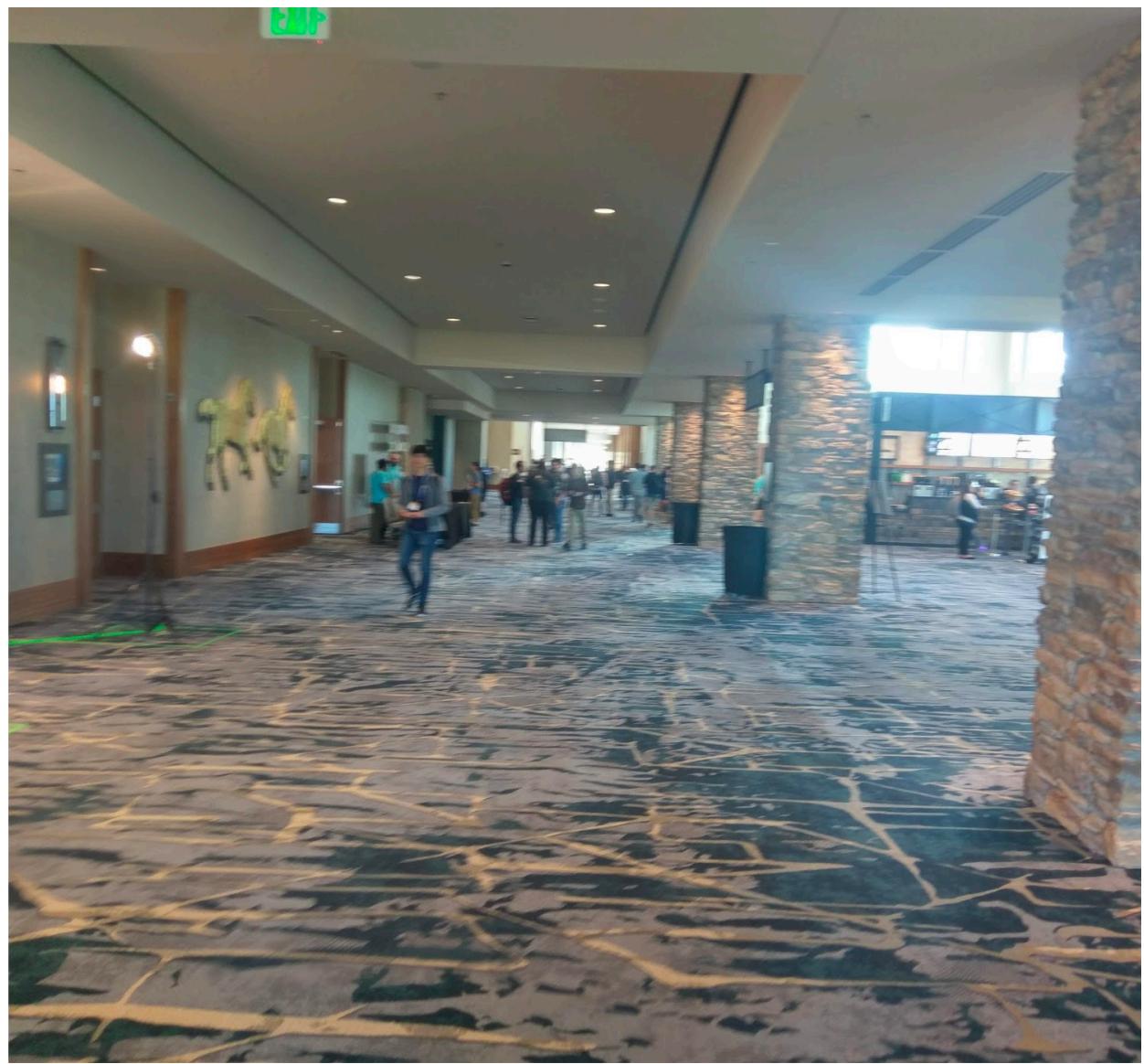
It still, to this day, doesn't show up on satellite maps on Google.



A really,
massively,
gigantic hotel



With a seemingly
never-ending
hallway



One decent greenway...

...which runs through
the middle of seemingly
the only part they're not
doing construction on,
yet.



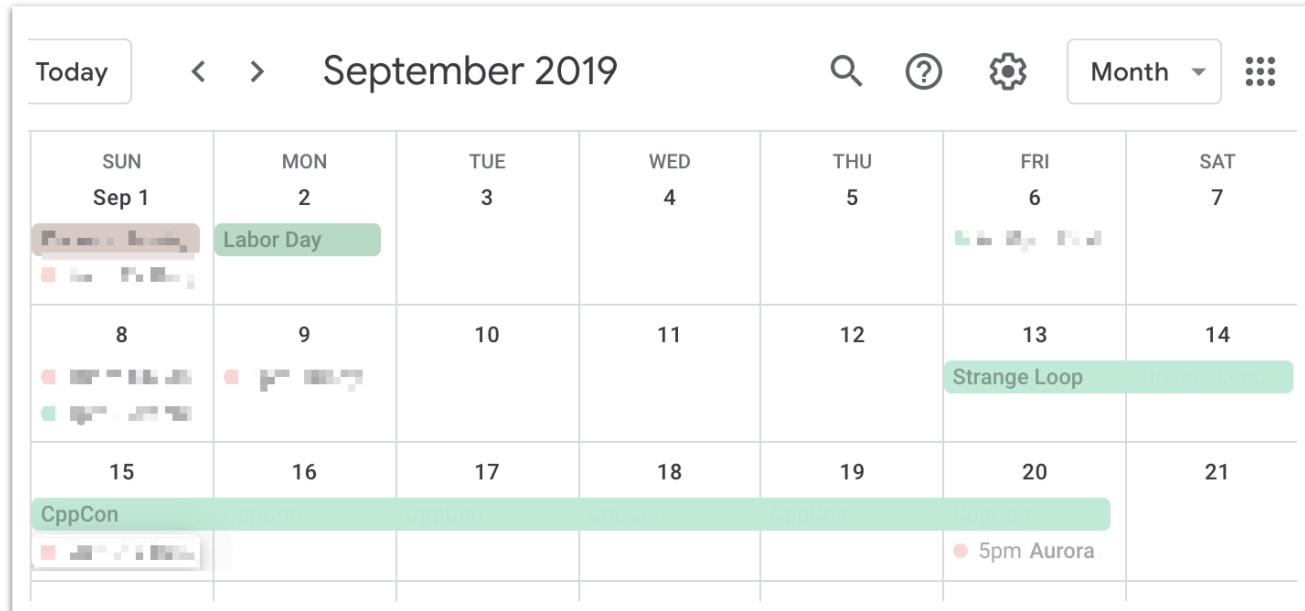
The logistics...

Getting there...

CppCon had frequently collided with Strange Loop in years past, but not this year.

Direct flights to Denver are plentiful and cheap.

Most area hotels have shuttles to the airport.



9/19/2019

STL to DEN | Confirm

WN 4991 (Southwest Air)

Depart
Saint Louis

Arrive
Denver

Booking Site: Southwest Airlines
Booking Date: 6/6/2019
Booking Site URL: <http://www.southwest.com/>
Booking Site Phone: 1-800-435-9792
Booking Site Email:
Total Cost: \$231.96
Booking Rate:
Reservation Purchased: Yes
Duration: 1H, 59M **Layover:** None **Connects to:** None
Seat(s): None Entered

Edit
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Traveler Info ▾

Costs...

Different hotel options around; my costs...

- \$1,000 – conference (early-bird, “regular” registration)
 - Students *much* cheaper
 - “Full” registration with swag and speaker meals a couple of hundred dollars more
 - Non-early bird a few hundred extra
- \$1,036 – hotel (\$179/night + tax, offsite @ Residence Inn)
 - Conference hotel around \$250/night + tax
 - One cheaper hotel used by many closer to \$120/night
- \$232 – flight (Southwest, Wanna Get Away rate)
- \$155 – food
- 40 minutes of walking each way (benefit – health!)

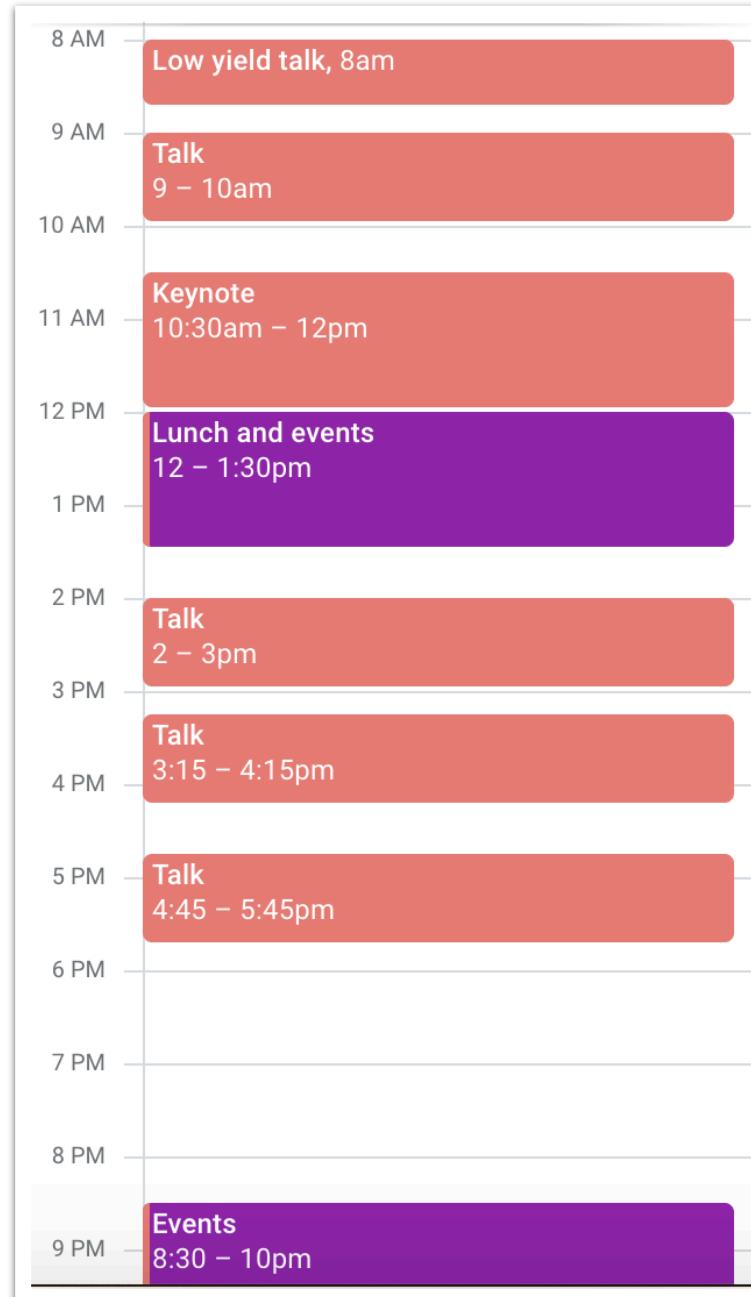
A typical day...

Six talks per day

A couple of days had shorter talks dividing up the mid-afternoon slot

Meetups sometimes happened over lunch

Most evenings had lightning talks



Getting around

Walking, walking,
walking.

Pretty much everything
that wasn't a sidewalk or
a road was under
construction.

Food was onsite at
resort prices, or offsite at
least 2 miles away (but
close to other hotels);
the last couple of days,
they brought in food
trucks for dinner



The Talks

The talks are all on YouTube. The CppCon channel has play lists for the regular talks and the lightning talks.

YouTube

cppcon

CppCon
65.3K subscribers

HOME VIDEOS PLAYLISTS

Created playlists

Bjarne Stroustrup
C++20: C++ at 40

This is a talk about C++ as it is today (C++20).
• new is good (old) and new (bad) is old.
• I am not fabricating examples as C++98, C++14, C++20, etc.
• I will, occasionally, give a historical perspective; we have come a long way.
• This is not a talk about "details".
• Every technical point mentioned here has a one-hour talk this week.

59 Functional without the functional library

```
graph TD; TaxDut[M] --> NetSales[M]; TaxDut[M] --> TaxRate[TaxRate]; NetSales[M] --> ExemptSales[ExemptSales]; TaxRate --> TaxCollected[TaxCollected]
```

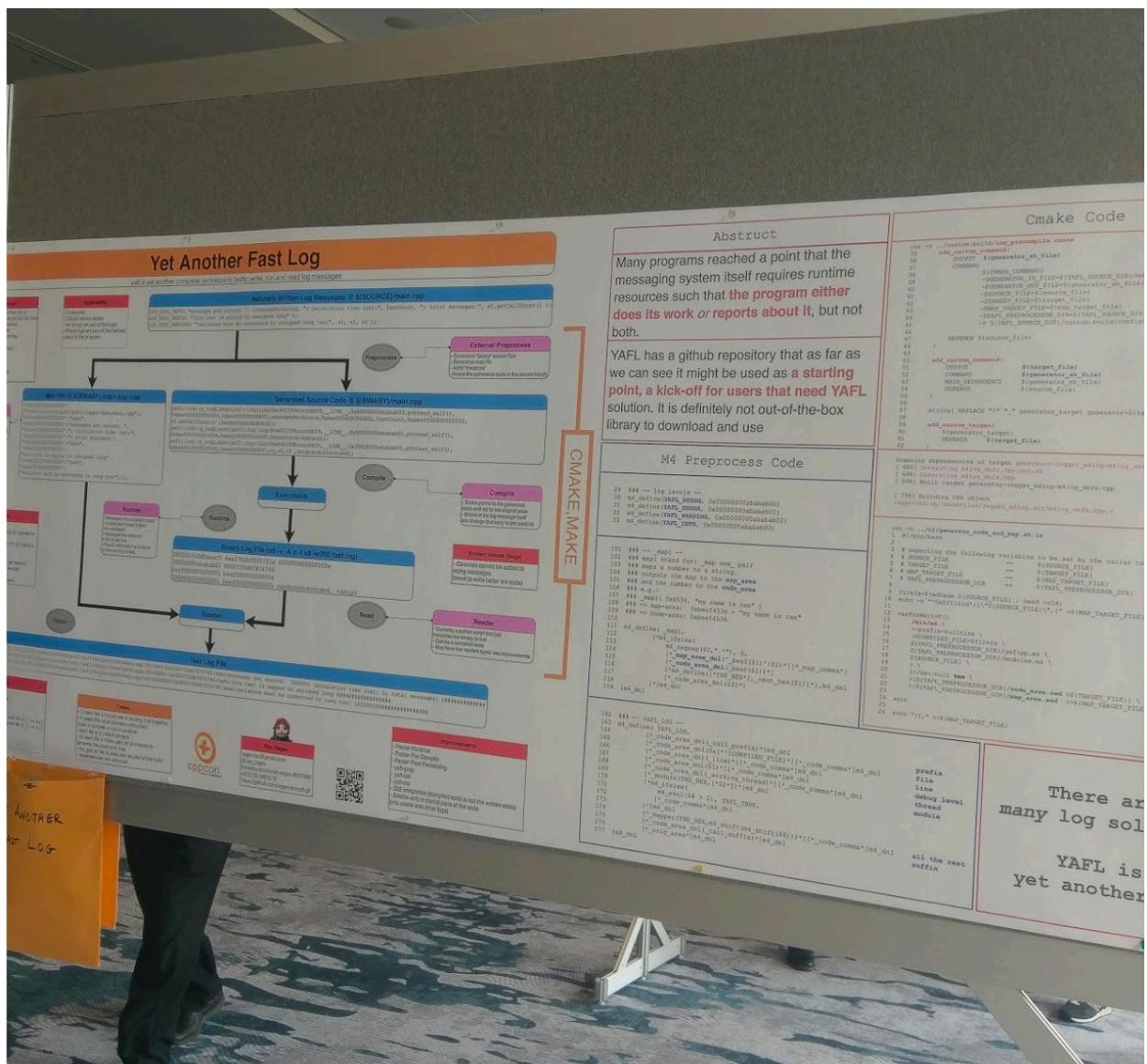
CppCon 2019

VIEW FULL PLAYLIST

CppCon 2019 Lightning Talks

VIEW FULL PLAYLIST

Poster session



Poster session



Some of my favorite talks

Keynotes

Title: C++20: C++ at 40

Speaker: Bjarne Stroustrup

Link: https://youtu.be/u_ij0YNkFUs

Bjarne outlines the principles drive the design and use of C++ since the very early years of C++. Bjarne sees C++20 as the best fulfillment of those principles to date, and demonstrates them in turn (18:00- in the video).

Keynotes

Title: Speed is Found in the Minds of People

Speaker: Andrei Alexandrescu

Link: <https://youtu.be/FJJTYQYB1JQ>

Andrei really drills in to sorting. Specifically, the issue of how to quickly sort a medium-sized (hundreds of elements) list. This is a proper talk about problem-solving. Algorithms, compiler optimizations, processor architecture, nothing is off the table.

Keynotes

Title: Better Code: Relationships

Speaker: Sean Parent

Link: <https://youtu.be/ejF6qqohp3M>

The underlying principles of why weak code is weak, considered as relationships between different portions of code.

Also, he's tired of being the "This is a rotate!" guy.

Keynotes

Title: Applied WebAssembly: Compiling and Running C++ in your Web Browser

Speaker: Ben Smith

Link: <https://youtu.be/5N4b-rU-OAA>

A fundamentals talk about WebAssembly. Goes over the technology and history of integrating C, then Posix, then C++.

With some live-coding at the end.

Keynotes

Title: De-Fragmenting C++: Making Exceptions and RTTI
More Affordable and Usable

Speaker: Herb Sutter

Link: <https://youtu.be/5N4b-rU-OAA>

A plea to fix the two most abused, most ignored features of the language.

Some other great things I saw at CppCon Visual C++ Edition

- Open-sourcing of VC++ standard C++ library
- Integration of Address Sanitizer with Visual C++ compiler
- Integration of clang-tidy with Visual Studio
- Integration of OpenMP with Visual C++
- Intellisense for templates hinted by actual template usage in your code
- Visual C++ build/debug into WSL, or to a remote Linux system
- Deep cmake/Visual Studio/vcpkg integration
- C++ debugger memory consumption optimized (Gears of War)
- VS in the Cloud (zero-config development environment)

Some other great things I saw at CppCon Module Edition

- Three talks explaining the latest Modules proposal
- I only saw Gabriel Dos Reis' talk of the three
- But I feel much more confident that modules are in a “reasonably solved” state for C++20 now

Some other great things I saw at CppCon Miscellaneous Edition

- Neat talk on vcpkg by Robert Schumacher, explaining the nature of the problems being solved and how vcpkg is contributing back to other communities to solve it
- To-do: investigate charconv as an alternative for floating point ↔ string conversion, per Stephan T. Lavavej's talk
- Craig Scott gives a bunch of great advice for using cmake to build libraries
- Kate Gregory: "[[nodiscard]] is a signal that people misunderstand the [function or method] name you're using now." I.e., if it was unambiguously adjectival, then nobody would be confused about whether they wanted to use the return value or not.

Some personal take-aways...

- Not quite as intimidating as C++Now; still many insanely knowledgeable people, but a better mix of students, etc.
- Back to Basics track is very interesting
- But it's big. Less discussions (arguments) from the crowd, bigger crowds by far.
- Bought Stepanov's "From Mathematics to Generic Programming" at the bookstore; a fascinating read I'm slowly working through (and similar to Andrescu's talk in spirit)
- Had a great meetup with desktop application developers
- One incredibly interesting lunch where I accidentally crashed a table of Boeing developers



Cppcon

The C++ Conference

2020 
September 13-18
Aurora, Colorado, USA

SAVE THE DATE
