C++ Club UK

Gleb Dolgich 2019-10-31

The Case for C++

```
https://itnext.io/the-case-for-c-4122a5b47130
https:
//www.reddit.com/r/cpp/comments/dnm77y/the_case_for_c/
```

ABI: Now or Never

```
P1863R0 by Titus Winters

https:
//www.reddit.com/r/cpp/comments/dnr2e1/abi_now_or_never/
C++ Epochs won't help as they only touch syntax, not ABI.
```

Scapix language bridge

```
https://www.scapix.com/introduction/
https://github.com/scapix-com/scapix
https://www.reddit.com/r/cpp/comments/cjvc1u/automatic_c_b
indings_for_various_languages/
https://www.reddit.com/r/cpp/comments/ckf44x/scapix_java_l
ink_modern_c17_jni_wrapper_library/
```

CURL wrappers

Swish

- https://github.com/lamarrr/swish
- https://www.reddit.com/r/cpp/comments/c8q0wh/a_moder n_c_17_http_client_library_for_humans/

CPR

- https://github.com/whoshuu/cpr
- https://whoshuu.github.io/cpr/

Span Lite

https://github.com/martinmoene/span-lite

A C++20-like span for C++98, C++11 and later in a single-file header-only library.

mdspan

- Implementation https://github.com/kokkos/mdspan (BSD 3-Clause)
 - Intro https://github.com/kokkos/mdspan/wiki/A-Gentle-Introduction-to-mdspan
 - r/cpp https://www.reddit.com/r/cpp/comments/cl127i/mds pan_productionquality_reference_implementation/
- Kokkos https://github.com/kokkos/kokkos
- Multi-dimensional strided array views in Magnum https://blog.magnum.graphics/backstage/multidimensiona l-strided-array-views/
- P0009R9 mdspan: A Non-Owning Multidimensional Array Reference http://wg21.link/p0009r9
- CppCast with Bryce Adelstein Lelbach https://cppcast.com/bryce-lelbach-mdspan/

Enums, warnings, and default

```
https://brevzin.github.io/c++/2019/08/01/enums-default/
https://www.reddit.com/r/cpp/comments/cubah9/enum_switc
h_warnings/
GCC & Clang:
1 -Wswitch-enum
```

Machine Learning with C++

Reddit

- PyTorch https://pytorch.org/features -- has a pure C++ front end https://pytorch.org/cppdocs/
- TensorFlow for C++ https://www.tensorflow.org/api_docs/cc
- Shogun https://www.shogun.ml/

The sad history of Unicode printf-style format specifiers in Visual C++

 $\label{local_com_old_newthing} $$ https://devblogs.microsoft.com/oldnewthing/20190830-00/?p=102823$

Reddit

Introducing Magnum Python Bindings

https://blog.magnum.graphics/announcements/introducingpython-bindings/

https://github.com/pybind/pybind11

AnyDuck: A Value Type Erased Type

```
Steve Downey: https://www.sdowney.org/2019/07/anyduck-a-value-type-erased-type/
```

Template meta-programming: Some testing and debugging tricks

https://cukic.co/2019/02/19/tmp-testing-and-debugging-templates/

using vs. typedef

https://www.nextptr.com/tutorial/ta1193988140/how-cplusplus-using-or-aliasdeclaration-is-better-than-typedef

Berkeley Container Library (BCL)

https://github.com/berkeley-container-library/bcl

C++ Interview Questions

https://www.reddit.com/r/cpp/comments/d9xnce/c_interview_q uestions/

Eliminating the Static Overhead of Ranges

Colby Pike, Reddit

Without ranges

```
vector<string> child_names;
for (auto& person : all_people) {
   if (person.age < 14) {
      child_names.push_back(person.name);
   }
}</pre>
```

With ranges

```
auto children_names =
all_people

filter([](const auto& person) { return person.age < 14; })

transform([](const auto& person) { return person.name; })

to_vector;</pre>
```

Change STL containers' size() method to return signed integer?

https://www.reddit.com/r/cpp/comments/dl7lcu/change_stl_containers_size_method_to_return/

Camomilla by Vittorio Romeo

A Python script that simplifies C++ compiler errors. Useful when using heavily-templated libraries.

https://github.com/SuperV1234/camomilla