

Vittorio Romeo

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Experience

- 2016–present **Senior Software Engineer & Technical Trainer**, *Bloomberg LP*, London.
- Teaching advanced courses on **modern C++**, API design, and multithreading
 - Worked on **BAS**, internal microservice backend infrastructure [*Modern C++, Python*]
 - Worked on **Market Order Data Analytics** full-stack infrastructure [*Modern C++, Python, JavaScript*]
- 2014–2016 **Full-Stack Developer**, *IEENG Solution*, Messina.
- **.NET**(C#, ASP), **Java**, and **PHP** backend development.
 - **HTML5**, **CSS3**, and **JS** frontend development.
 - **SQL** database design and maintenance.

Education

- 2013–2016 **Bachelor of Computer Science**, Università degli Studi di Messina, Messina.
- Grade: *110/110 cum laude*
Thesis: **Analysis of entity encoding techniques, design and implementation of a multithreaded compile-time Entity-Component-System C++14 library**
- 2008–2013 **High School Diploma**, Istituto San Giovanni Bosco, Messina.
- Grade: *100/100 cum laude*
Honors: **MIUR** (*Italian Ministry of Education*) National Register of Excellences 2012-2013
Project: **Simulation of evolution through genetic algorithms**

Skills

- advanced C++, C++11, C++14, C++17, C++20
- intermediate Python, \LaTeX , JavaScript, Unix, C#, PHP, SQL, Java
- novice Haskell, Rust

Publications

- **Embracing Modern C++ Safely**
In-depth analysis of C++11/14 feature usage at scale.
[John Lakos, Vittorio Romeo, Rostislav Khlebnikov, Alisdair Meredith]
[Published Dec 23, 2021 by Addison-Wesley Professional. (ISBN-13: 978-0-13-738035-0)]
- **P2048: Prohibit zero and 'NULL' from being used as null pointer literals**
Standard ISO C++ proposal to remove obsolete syntax.
- **P1881: Epochs: a backward-compatible language evolution mechanism**
Standard ISO C++ proposal for language versioning.
- **P1819: Interpolated literals**
Standard ISO C++ proposal for interpolated string literals.
- **P1062: Diet Graphics**
Standard ISO C++ proposal for a lightweight graphics API.
- **P0792: 'function_ref': a non-owning reference to a 'Callable'**
Standard ISO C++ proposal for a general-purpose function reference.

Courses and Workshops

- **C++11/14 for C++03 Developers**
In-person training class on modern C++. Delivered at CppCon 2019.
- **What's new in C++**
Video course on C++17's most important features. Published by O'Reilly.
- **Type-Safe Interfaces with Modern C++**
Video course on writing intuitive and secure APIs. Published by Packt.
- **Mastering C++ Standard Library Features**
Video course on advanced use of the C++ standard library. Published by Packt.

Presentations

- **C++11/14 at Scale - What Have We Learned?**
ACCU 2021 (Remote), C++Now 2021 (Remote), CppCon 2021 (Remote), Cpp Toronto 2021 (Remote)
- **Fixing C++ with Epochs**
CppCon 2019 (Aurora)
- **Making sense of terrible template errors with 'camomilla'**
CppCon 2019 (Aurora)
- **Putting 'integer_sequence' on a diet**
C++Now 2019 (Aspen)
- **Higher-order functions and 'function_ref'**
C++ on Sea 2019 (Folkestone), ACCU 2019 (Bristol), C++ Russia 2019 (Moscow), C++Now 2019 (Aspen), CppCon 2019 (Aurora)
- **Zero-allocation & no type erasure futures**
ACCU 2018 (Bristol), itCppCon 2018 (Milan), C++Now 2018 (Aspen)
- **'function_ref'**
Meeting C++ 2017 (Berlin)
- **You must type it three times**
C++Now 2017 (Aspen)
- **Implementing 'variant' visitation using lambdas**
ACCU 2017 (Bristol), C++Now 2017 (Aspen), C++::London [May 2017] (London)
- **Checking expression validity in C++11/14/17**
C++::London [Dec. 2016] (London)
- **Implementing 'static' control flow in C++14**
Meeting C++ 2016 (Berlin), CppCon 2016 (Bellevue), C++Now 2016 (Aspen)
- **Implementation of a multithreaded compile-time ECS in C++14**
Meeting C++ 2016 (Berlin), C++Now 2016 (Aspen)
- **"Meaningful" casts**
Meeting C++ 2015 (Berlin)
- **'static_if' in C++14**
Meeting C++ 2015 (Berlin)
- **'for_each_argument' explained and expanded**
CppCon 2015 (Bellevue), C++Now 2015 (Aspen)
- **Implementation of a component-based entity system in modern C++11**
CppCon 2015 (Bellevue)
- **Introduction to game development with C++14**
++it Meetup 2015 (Florence)
- **Introduction to Git and GitHub**
Linux Day 2014 (Messina)
- **Quick Game Development with C++11/C++14**
CppCon 2014 (Bellevue), Linux Day 2013 (Messina)

Projects

- **Open Hexagon**
Commercial *open-source* C++20 game featuring *online leaderboards*, and extensive *Lua* scripting capabilities for user-generated content.
- **Quake VR**
FOSS C++17 mod turning Quake (1996) into a first-class virtual reality experience.
- **scelta**
FOSS C++17 *variant* and *optional* utility library.
- **Dive into C++11/14**
Modern C++ video tutorials ranging various topics. Heavily focused on code quality, latest standard features, and best practices.
- **ecst**
FOSS C++14/17 multithreaded compile-time *Entity-Component-System* library.
- **'vrm' and 'SSV' libraries**
FOSS C++14/17 multi-purpose libraries, ranging from *component-based entity systems* and *physics engines* to *JSON parsers*, *templating engines*, and *math utilities*.
- **NetLayer**
FOSS C++14 library for quick creation of efficient callback-based network applications. Packet handlers are bound at compile-time. The underlying communication protocol is abstracted away. Features recursive automatic serialization.
- **AutoSyncGen**
FOSS C++14 library for automatic compile-time generation of generic network-synchronizable data structures. The state of multiple clients is kept in sync with a server using *delta compression*.
- **veeForum**
FOSS PHP5 *forum creation framework* featuring a modern responsive web interface, complex SQL (*heavy use of triggers, stored procedures, cursors*), and PHP5-to-HTML page generation.
- **camomilla**
FOSS Python 3 script that simplifies C++ error messages for heavily-templated code.
- **git-ws**
FOSS C++14 CLI utility to work with multiple *git* repositories at once.
- **Delver's Choice**
Casual *FOSS* C++14 game with rogue-like elements originally developed for *Global Game Jam 2014*.
- **vittorioromeo.com**
Personal website created with a *FOSS* C++14 *static website generator*. The *JSON* library and *templating engine* were written from scratch. Contains tutorials and articles about C++.

Links

- **Official website for my "Embracing Modern C++ Safely" book**
<http://emcpps.com>
- **YouTube playlist of my presentations**
https://www.youtube.com/playlist?list=PLTEcWGdSiQe1EQw64Z7EL2vk6LsKW_Ouj
- **YouTube playlist of my online video tutorials**
<https://www.youtube.com/playlist?list=PLTEcWGdSiQenl4YRPvSqW7UPC6SiGNN7e>
- **Official website of my "Open Hexagon" game**
<https://openhexagon.org>
- **YouTube playlist for my "Open Hexagon" game**
<https://www.youtube.com/playlist?list=PLTEcWGdSiQemYtpLFmiI7K-ChTfJa4EnI>
- **Official website of my "Quake VR" game**
<https://vittorioromeo.com/quakevr>
- **YouTube playlist for my "Quake VR" game**
<https://www.youtube.com/playlist?list=PLTEcWGdSiQeloB1JPTyC7uwshaPfU4vIH>