

Zetian Qin

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Education

University of Birmingham 2019/09 - 2020/10
Master of Science in Computer Science, with Distinction Edgbaston, Birmingham, UK
• Courses: Software Engineering, Data Structures, Database, Operating Systems & Networks, etc.

Southeast University 2014/08 - 2018/07
B. Eng in Environmental Engineering Nanjing, China
• Teaching Assistant for Programming & Algorithmic Language (2017)
• Mentored by the Head of the Information Security Department, studied information security related knowledge.

Work Experience

ByteDance, Ltd. 2024/01 - Now
Compilation Engineering and Efficiency R&D Engineer FTE, Team Compiler & Library Hangzhou, China
• Responsible for releasing the compilation toolchain used for C++ server-side development within the company.
• Maintained and ensured the availability of compilation tools and C++ common basic libraries on both x86 and ARM platforms.
• Optimized compilation time using technologies such as Profile-Guided Optimization (PGO), Link Time Optimization (LTO), and Precompiled Headers (PCH).
• Assisted in troubleshooting and pinpointing issues related to C++ CoreDumps in various business applications.
• Enhanced the efficiency of C++ unit testing practices.

ByteDance, Ltd. 2020/12 - 2023/12
C++ R&D Engineer FTE, Team Omni-Channel Intelligent Communication Beijing, China
• Participated from inception and later led the development and construction of a Call Center CTI (Computer Telephony Integration) and its supporting services. Designed and implemented telephony interaction and call flow models, based on the capabilities of traditional call centers.
• Spearheaded the restructuring of the original single-point, single-instance service design to adapt to a microservices architecture supporting multiple clusters, instances, and data centers.
• Independently developed CTI and its accompanying services, successfully replacing the previously purchased Genesys commercial system, with a capability to handle tens of millions of calls daily.
• Introduced unit testing and authored fundamental general-purpose libraries, and accomplished the toolchain upgrade from gcc 4.94 to gcc 8.30, then to clang 11 and subsequently to clang 14 to improve C++ development efficiency.

Early Academic Publications

Acute toxicity and ecological risk assessment of 4,4'-dihydroxybenzophenone, 2,4,4'-trihydroxybenzophenone and 4-MBC in ultraviolet (UV)-filters Apr 8, 2021
• This study analyzed the acute toxicity of UV filters 4,4'-dihydroxybenzophenone, 2,4,4'-trihydroxybenzophenone, and 4-MBC on *Chlorella vulgaris* and *Daphnia magna*, finding significant toxic effects with varying degrees of severity. It also observed both additive and antagonistic effects on *C. vulgaris* when these substances were mixed, indicating complex interactions in environmental contexts.

Evaluation by the Ames Assay of the Mutagenicity of UV Filters Using Benzophenone and Benzophenone-1 Sep 02 2018
• The study reveals that benzophenone-type UV filters, used in personal care products, exhibit mutagenic effects on certain strains in the Ames assay, with complex interactions indicating antagonism in mutagenicity between BP and BP-1.

Others

Translation Works Dec 2021
• **C++ Lambda Story: Chinese Edition** Introduces all the evolution of Lambda from C++98 to C++20.