✉ mlugg@mlugg.co.uk

📞 07716 031561

🐙 mlugg

Matthew Lugg
Software Developer

SKILLS

- Significant experience with systems and low-level programming, performance and memory optimization, and data-oriented design
- Personal and professional experience in system administration, software engineering, and technical support
- Experience with use and administration of Linux-based systems
- Clear communication and excellent written English

TECHNOLOGIES

Technology	Years
Zig	4 yrs
C	9 yrs
C++	6 yrs
Python	5 yrs
Haskell	4 yrs
SQL	5 yrs
Linux	7 yrs

EXPERIENCE

COMPILER DEVELOPER · 📍 Zig Software Foundation   (2022 — ongoing)
- Major contributions to widely used open-source compiler, including profiling and performance analysis
- Compiler intermediate representations, semantic analysis, and optimization passes
- Incremental compilation: graph algorithms, dependency analysis, and state serialization
- Debugging, reporting, and appropriately managing upstream bugs
- Integration with external libraries and software, in particular LLVM
- Widely coordinated and collaborative development efforts via Git
- Engagement and discussion with community of end users, including issue management and triage

DEVELOPER · 📍 Cisco via Oxford University   (2023)
- Creation of web-based visualization tool for integration with proprietary systems
- Integration with external libraries for performant computation
- Full-stack development alongside leadership responsibilities in a small team with a variety of skills

JUNIOR DEVELOPER · 📍 Lovell Sports   (2019)
- Full-stack web development in Perl, including integrations with payment and stock APIs
- Maintenance and incremental improvements to legacy codebase
- Collaborative version control and code reviews in a small team

OTHER OPEN-SOURCE DEVELOPMENT
- `SourceAutoRecord` – details of C++ ABI and binary hooking, and open-source project management
- `adrift` – desktop application development, IPC
- `tqc` – compiler development including x86 code generation
- `gapxos` – x86/amd64 internals and freestanding development
- `vmv` – audio processing and visualization

QUALIFICATIONS

BA COMPUTER SCIENCE (2024)
📍 University of Oxford
First Class

A-LEVEL (2021)
📍 Exeter Mathematics School
A∗A∗A

GCSE (2019)
📍 Torquay Boys' Grammar School
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TALKS

Data-Oriented Design Revisited: Type Safety in the Zig Compiler (2024)
📍 Software You Can Love Milan