Tom Farmer

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Skills

C++
- Excellent knowledge of C and C++, including C++11/14/17
- Experience with common tools (Visual Studio, GCC, make, etc.)
- Four years of commercial C++ experience

Other languages
- Significant knowledge of Java, Python, Javascript, SQL, HTML and CSS
- Exposure to many others (Rust, Ada, Assembly, Haskell, Scala, etc.)

Other technologies
- OpenGL and GLSL
- Parallel programming (pthreads, MPI, OpenCL, SIMD, etc.)
- Parallel architectures (HPC Wales supercomputing cluster, Intel Xeon Phi, etc.)
- Testing frameworks (junit, etc.)
- Development for Windows, macOS and Linux
- Web development (jQuery, AJAX)
- Version control (Git, Subversion)
- Issue tracking (Redmine, Jira)
- Graphics packages (Photoshop, etc.)
- 3D modelling packages (Blender, SketchUp)
- Game engine tools (UnrealEd, TES Construction Kit)
- Typesetting (LaTeX)
- DICOM standard for medical image data
- LDAP

Other
- Japanese Language Proficiency Test N3 (2016)
- Clean UK driving license
- IEC 62304 Medical device software – Software life cycle processes
- Familiarity with FDA regulations for medical devices
- Experience of statistical analysis

Experience

Software Developer, Hamamatsu Photonics (2015-present)
- Developed and maintained software for use in digital pathology
- Developed desktop and server software, primarily in C++
- Implemented support for competitor file formats
- Maintained the render pipeline
- Designed and developed new DICOM software
- Developed testing routines
- Directly supported customers and staff
- Attended conferences and standardisation meetings
- Maintained multiplatform build system
- Worked with international team including regular video conferences
- Worked in Japan for two months, liaising directly with Japanese head office
- Supported FDA and ISO approval process

Intern, Harrogate Borough Council (2013)
- Reported on the council's social housing allocations policy as part of an on-going consultation process

Education

MSc Computer Science, Distinction
Swansea University (2014-2015)

BSc (Hons.) Economics, 2:1
University of York (2009-2012)

A Levels: Computing, A; Economics, B; History, B; Mathematics, B
Gorseinon College (2007-2009)

Projects

Software Renderer (2019)
A software renderer written for fun, featuring a z-buffer, perspective-correct texture mapping, bilinear texture filtering, alpha blending, scan-line interleave, render-to-texture and custom fragment shaders. The renderer itself is written as a library, but a demo is included which features dynamic, per-pixel lighting. Link

Wakarahende (2019)
A website to help people learn Japanese vocabulary, based on a method I developed while studying for the Japanese Language Proficiency Test. It uses flashcards to teach vocabulary and kanji (Chinese characters) at the same time, introducing users to the "next easiest word" based on their existing knowledge. Link

Dissertation (2015)
"Evaluating the performance and usability of task parallelism on Intel Xeon and Xeon Phi processors" as part of MSc. Computer Science at Swansea University. The report tests a number of custom benchmarks and makes recommendations for maximising performance of software written for Intel's massively parallel hardware. Link

Deferred Renderer (2015)
3D graphics demo written as a hobby project, featuring deferred rendering, zone/portal culling, a binary-encoded model format and custom tools. Link

Ray Tracer (2014)
Ray tracer written for an optional university project. It features reflection, multi-threading, anti-aliasing, depth-of-field, HDR rendering and dithering of floating-point colour channels. Link

Continent Construction Kit (2014)
Library using simple structures to model continental interactions and efficiently produce semi-realistic geographic features. Link

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References

Available on request