

KUIASH

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[kuiash.com](#)

2013/09 to Present Day

Mere Cottage, Linnetts Lane, Sturmer, Essex, CB9 7XW

07890 987 026

matthew@kuiash.com

Kuiash.com's clients have included Sky, Huawei, Samsung, Yenka, Kindid amongst others and I liaised with others such as Broadcom, ARM on behalf of my clients

- C/C++ (including 11/14/17)
- Qt/GML
- UI/UX
- OpenGL (ES) & Shaders + Vulkan
- Javascript/Node/NPM/DCOM
- GPU hardware/software
- Data analytics and analytic tool creation
- Project Management - Various tools - Various styles
- Software/hardware co-design (instruction sets/memory systems)
- C# + some Java
- Template/meta programming
- SQLite/MySQL/MongoDB
- Drivers/Middleware and some low level WDM/Linux drivers
- Full app life cycle development (Android gaming, Desktop apps etc)
- Network and data protocols (Sockets/HTTP/RDP etc + JSON/XML etc)
- GIT/SVN etc

Examples...

- 2018/19 International mobile phone company
 - Qt/C++ data analysis tool in a similar style to sysstrace
 - Enabled tracing of causative relationships in graphics driver code as 'jobs' were added to various command chains, processed by different host code and how these related to actual hardware tasks
 - Deep dive into user space drivers to find the appropriate points
 - Specification of a new, parallel (non-locking), parallel job sequencer
- 2017/2018 Large mobile phone company
 - Linux kernel and user space driver work
 - VMs, GEMU etc
 - Many and varied tasks relating to the control of hardware by the user space drivers via a kernel driver including memory management, security etc
- 2016 - Self released puzzle game title
 - Mostly Qt & Android
 - OpenGL ES (hand coded engine)
 - Learn't a lot - will probably not do this again!
- 2013/2016 - Large international broadcasting company
 - Pure C++ project for storing a local copy of a software catalogue securely on a set-top-box.
 - This software module handled secure transmission of cryptographically secure applications packages from a remote server to the STB itself
 - The module also periodically ran and checked for updated packages downloading these are necessary. It also gracefully handled the inability to check the server by backing off on repeated requests by extended the time between checks until communication could be reinstated
 - Specification of XML schema for storage and communications
 - C++11 threading primitives to realise parallel download and processing
 - Various external modules were required such as libxml, libson, mongoose and others - some changes were upstreamed to these OSS packages
 - Application framework and debugging graphic drivers in liaison with the hardware/driver manufacturers

I can work fully remotely from my own office or on-site and will provide a per-customer VM. We are fully insured, VAT registered, employ an accountant etc

[Samsung Electronics Research Institute](#)

2010/05 to 2013/09

Communications House, South Street Staines Surrey, TW7 4AF

HR 01784 428600

At Samsung I worked on the Android graphics stack fixing problems and optimising fundamental graphics algorithms whilst inventing new techniques and analysis.

I worked extensively with hardware GPU vendors, proofed specifications and also wrote C, C++, Java and ARM NEON assembler code in the quest for better performance on Samsung Android devices. I also wrote and reviewed specifications, produced project plans, monitored project progress, produced reports and much more. APIs used include the Android Java class hierarchy, Qt for creating analysis, visualisation and ad-hoc developer tools, ARM NEON assembler, C, C++ and occasional PERL scripting for data collection and sanitisation.

[Burnttoys Ltd](#)

2009/07 to 2010/05

9 Leighton Road, Kentish Town, NW5 2GD

I was contracted by DDN working on a client/server music application. This involved the design and implementation of a music player and on-line music store for Windows and OS X. This included UI/UX, secure purchase of music, user validation, log-in and much more besides, XML Schema etc

During this time I also worked on several company websites using LAMP technologies

Almost all of my work was conducted using Qt, Qt Creator and MS Dev Studio. Small amounts of OS interfacing were required for OS X to implement a scheme handler allowing custom URLs embedded in web-pages to launch our application. Media playback was provided by several libraries as we fought to provide the best possible user-experience.

[Yamaha Research Labs](#)

2007/06 to 2009/07

3 Devonthurst Place, Chiswick, London, W4 4JD

Atsuko Fletcher: 020 8987 9595

The main work was the creation, design and implementation of a project called BODIBEAT, a combined music player and exercise recorder. The PC software was an iTunes-alike package that also displayed vital statistics logged during a users run. This was written in Qt/C++.

Myself and the team then used C# and XAML to port this application to the web as a Silverlight web-app. I am particularly impressed with LINQ.

After this some work on Azure platform as a proxy log-in and cloud storage system which would allow the user to take control of networked Yamaha devices. In addition to this some work was done on to tunnel to USB connected music devices through web-browser plug-ins. For this I used Qt to create both a web-browser plugin and a system tray application that kept track of the connected devices.

[Archway London](#)

2007/01 to 2007/06

Archway, London, N16

Archway-London was a LAMP stack based web service. I collected information on every shop, company, office in N19 and created a web service to allow them to be edited. Specialisms allowed, for example, shops to store opening hours and companies to list keywords describing their operations. Maps where fully integrated.

A pseudo-hierarchical taxonomy allowed a user could refine a search to a small selection of providers in just a few clicks

Revenue was collected from users by allowing them to extend or promote their organisation and from Google AdSense

[3D Labs - Defunct - Became Part of Creative Labs, then Zii Labs and is now part of Intel](#)

2005/10 to 2006/12

Apex Court, Bristol, Meadlake Place, Thorpe Lea Road, Egham, Surrey, TW20 8HE

At 3D Labs I was involved in the creation of host and device software for an interesting parallel processor targeting graphics. The device was an array of in-order SIMD processors with each having their own conditional flags so that instructions could be masked on a per-processor basis although the same code would be executed on all. A form of ring bus utilising registers allowed communications between devices. The parallel array was backed by 2 ARM7 cores one for OS functions the other for auxiliary, mostly serial, tasks the device was not well equipped for. I wrote both control (ARM7) software and device software in both C and Assembler. In addition to this I also wrote/extended/debugged off device logging, visualisation and simulation code/apps in C,C++, Ruby, PERL and others

- Writing of 2D graphics libraries & an H264 video encoder written in a proprietary parallel SIMD assembler language & C++
- Optimization of ARM7 code for serial tasks such as Huffman encode/decode
- Remote debugging of embedded C and assembler code via serial and Ethernet
- Optimisation of ARM assembler code
- H264 Quantisation and Motion Compensation routines
- Alpha blending and format conversion routines
- Writing of portable code running on Win32 and Linux
- Writing and maintenance of documentation in Wiki
- Benchmark and profiling routines in PERL to export to CSV, GNUPlot and HTML formats
- Evaluation of third party applications
- Evaluation of benchmark data, profiling data, source & object code to direct future hardware developments
- Creation of a suite of test routines, image quality diagnostics and persistent storage libraries
- Evaluation of Linux audio subsystems
- Creation and maintenance of documentation in a company Wiki
- Port of a substantial Ruby application and implementation and maintenance of new Ruby applications
- Maintenance of PERL applications and creation of development and reporting tools in PERL

[Sensaura - Defunct - Became Part of Creative Labs](#)

2002/11 to 2004/11

Hayes & Harlington, Later Egham, Surrey, Meadlake Place, Thorpe Lea Road, Egham, Surrey, TW20 8HE

Sensaura designed and implemented 3D audio algorithms and software. Initially marketed towards integration into game engines we moved the software to a WDM filter driver and sold this to PC audio CODEC manufacturers for integration into their driver stack. The value-add for those manufacturers using our software was that their bare AC97/Azalia CODEC now had 3D audio support! One particularly interesting product I worked on was one to mimic 5:1 surround sound system on headphones by placing the speakers on a virtual sound stage.

- Design and implementation of audio algorithms
- Maintenance and debugging of Kernel WDM Device Drivers and filter drivers
- MMX, SSE, SSE2 assembler coding for math kernel functions
- Coding of math intrinsic functions in SSE (oscillators, filters)
- C and C++ using Microsoft Developer Studio
- MFC GUI Applications with interactive graphing software
- ActiveX component to allow remote control of the audio subsystems
- Liaison with 3rd party developers to confirm and fix bugs in both our and their products
- Travel abroad to demonstrate product to new customers and to provide engineering support to existing
- Port of C and C++ code to WDM environment

[Primary Image Limited : Defunct](#)

2001/11 to 2002/09

Millbank House 171-185 Ewell Road, Surbiton, Surrey, KT6 6AX

The main focus as Primary Image was the creation of an early AR system. This allowed the mapping of panoramic 360° imagery with 3D models and physics. Further details are subject to the OSA.

- OpenGL on Win32
- Orthographic projections with Z Buffering for overlaying of 3D models
- Realtime JPEG decompression
- Image/Texture Caching
- Simulation Systems
- Hardware Interfacing
- MMX optimised routines (MIPMAP generation) Digital Photography
- Remote, Low Level & Hardware Debugging

[Videologic - Now Imagination Technologies](#)

1997/04 to 2000/12

Home Park Estate, Kings Langley, Hertfordshire, WD4 8LZ

hr@imgtec.com

When I started I was working on optimizing drivers for GDI and D3D for *3rdparty* chipsets - notably those from Cirrus Logic and Tseng. But it was at this time that it was clear that the previous industry model of separate silicon/software/board providers was no-longer working and silicon providers started producing reference boards and reference software which, inevitably, became the gold standard. Img Tech pivoted to become a combined hardware/software provider. I wrote both driver code, device code and analytics code during this process as well as providing future directions and specifications to enhance next generation products.

- MS Developer Studio, MASM, SoftICE, VTune, Paint Shop Pro, Visual BASIC, C, C++, Assembler (various)
- Kernel GDI Device Drivers. 95,98,ME,NT,2K,XP
- VXD and NT Kernel component coding and debugging
- Memory Management & DMA
- Assembler coding x86 16bit, 32bit and proprietary 32bit RISC
- Optimisation and design of microcode
- General debugging of simulator code and writing a VisualBASIC GUI front end PERL scripts to process benchmark and profiling data output in HTML & CSV
- Profiling of driver performance to allow effective design of future hardware developments
- Involved in the design and implementation of future hardware, instruction sets, microcode etc.

[Chadwyck-Healey Ltd - Now ProQuest Information and Learning](#)

1995/06 to 1997/04

The Quorum, Barnwell Road, Cambridge

- PERL, C++, C, Windows, MSDOS, MS TestBASIC, Visual FoxPro, SQL
- Software testing and test suite construction in MS TestBASIC
- Design and implementation of a multi-user data edit application in Visual FoxPro with SQL and extensive validation and postponement
- Creation and debugging of database front ends and search engines using C++ and DWL
- Creation and maintenance of C based MSDOS data processing tools
- Creation and maintenance of massively parallel PERL based data processing tools

[Pi Research Ltd - Now part of Cosworth Group](#)

1990/07 to 1993-07

Milton Cambridge, CB4 6WZ

- C, C++, MFC, Windows (3.1), MSDOS, Hardware interfacing (UARTS, Mouse, CGA, EGA, VGA, Parallel), microEmacs
- Creation, Design and Maintenance of data analysis tools and the appropriate GUI
- Creation of tools using C on MS-DOS
- Creation of tools using C++ and MFC on Windows 3.1, Workgroups and NT
- Software serial protocols to interface with data loggers and telemetry systems
- Implementation of software simulators for testing
- Numerous bespoke applications for customers
- Customer liaison and on-site support
- Hardware interfacing to CGA, EGA, VGA, Parallel and Serial ports with x86 assembler implementation of mathematical analysis tools and graphic procedures
- Implementation of high resolution printouts under MS-DOS
- Implementation and design of GUI components, dialogue boxes, realtime graphical displays etc.

[Other Contracts, Short term/Gigs etc](#)

I have worked many short term and directly customer facing gigs. Here are a few.

[Arcane Apparatus](#)

2008

Photoshop, PERL, PHP, HTML, CSS, Design, LAMP, Linux, MySQL

[Trash Inc](#)

2003

Photoshop, PERL, PHP, HTML, CSS, Design, LAMP, Linux, MySQL

[Codeplay](#)

2001

C, C++, NSIS, Windows Installation Scripts, Batch files, Dev Studio, Compiler Tech

[Symbian](#)

2004/2005

C, C++, Perforce, Radio Interfaces, Audio, Abstractions

[Laluna Central](#)

2009

Photoshop, PERL, PHP, HTML, CSS, Design, LAMP, Linux, MySQL

[Seraphim Lingerie](#)

2005

Photoshop, PERL, PHP, HTML, CSS, Design, LAMP, Linux

[DDN Global](#)

2009/2010

Qt, C#, C++, Visual Studio, OpenGL, Widgets, UI, UX, HTTP Protocol, Security, Windows, Audio