Greg McCormack

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Professional Profile :

I started my working career as a Control Systems Engineer, working across many different industries and most sectors of control engineering. This means that I have very valuable experience.
Enjoy being a team player, sharing results and successes with the team around me, I am comfortable in a senior role, sharing my knowledge and experience with more junior engineers.
"Highly respected by all those around him, with his professional approach, gets on well with fellow engineers and customers alike. "

References available on request – Please contact me - grmccormack@googlemail.com

Education and Qualifications :

1981 – 1985 **BSc in Electrical and Electronic Engineering** from Liverpool John Moores University (Liverpool Polytechnic)

2017 **17th Edition Wiring Regulations** and became a Part P Registered Domestic Installer with the NICEIC

Recent Career History :

adi Automation Systems Engineer – Siemens - Allen Bradley – (amongst other things :-) Batching for Heinz, Telford; Remote support for Peel Ports Engineering.

Also working as a Software Developer > using embedded technologies , C++ on NodeMCU boards to communicate on ESP-NOW protocol to replace clunky older technology for Bentley Cars, Crewe.

B2Controls , Altrincham - Siemens Transportation Systems UK, Leicestershire - for the Crossrail London.
Working as a Software Developer using (a variant of) Pascal, Visual Studio, .Net , Plastic SCM (a cross-platform distributed version control system), Jira (collaborative agile ticketting system for software development) and many bespoke packages for the development of the SCADA system for the monitoring (via OPC connections) of the Crossrail stations and infrastructure.
(Post commissioning it is now the Elizabeth (underground) Line.)

Over the Summer2020 (Covid) C++, Python, Gtk, Julia (based on Matlab & Python), PlatformIO on Visual Studio Code.

Feb 2020 – Laid off due to Corona Software department at Thyson Technology – they design and manufacture Grid Entry Units for Gas and BioGas into the Gas network. Increasing the calorific value by adding propane prior to injection into the grid.

Autumn 2019 – Feb 2020 **Cygnet Texkimp** in **Northwich,** a short three month contract, they manufacture carbon fibre cutting and winding machines for customers around the world. They needed assistance coding their Beijer HMIs with Beijer's iX Configurator. (with scripts written in **C#)**.

Sept 2018 – Spring 2019 Worked on contract for **GEA, Warrington**
Working primarily on one of their customer's sites - Greencore, commissioning cookers for the ready meal market. The cookers needed **batch** sequencing, and CIP (Cleaning In Place) which was done to exacting standards. The system used Allen Bradley with Wonderware InTouch Scada system with a bespoke recipe management system.

Embedded Technologies - RTOS

cpp C++ coded on Visual Studio Code using Platform IO.
FrontEnd running JavaScript , with JSON structures
Breadboard designs including Relay boards as outputs
And 74HC595 as Cascade chips to control many outputs.
And 74HC4067 to multiplex signals to expand the capabilities of NodeMCU and similar devices.

PLCs

Predominately :-

Siemens	TiaPortal S7-1500, S7–300's & 400's TwinCat 3 (4-Mation)
Rockwell - Allen Bradley	PLC5 , SLC500, ControlLogix, RSLogix5000

SCADA \ HMI Systems

Siemens	WinCC and WinCC Flexible
Allen Bradley	FactoryTalk
Wonderware	InTouch
Moore Products	ProcessSuite \ MicroAdvantage
GE	iFIX 5.8 and FIX32
Bristol Babcock	Enterprise
Mitsubishi	MAC50 , Beijer iX Developer

Office

Microsoft	Office – Excel, Word, Dbase, VStudio, VB MSProject
OpenOffice	scalc with macros and faceplates, Database and Drawing Package.

Networks

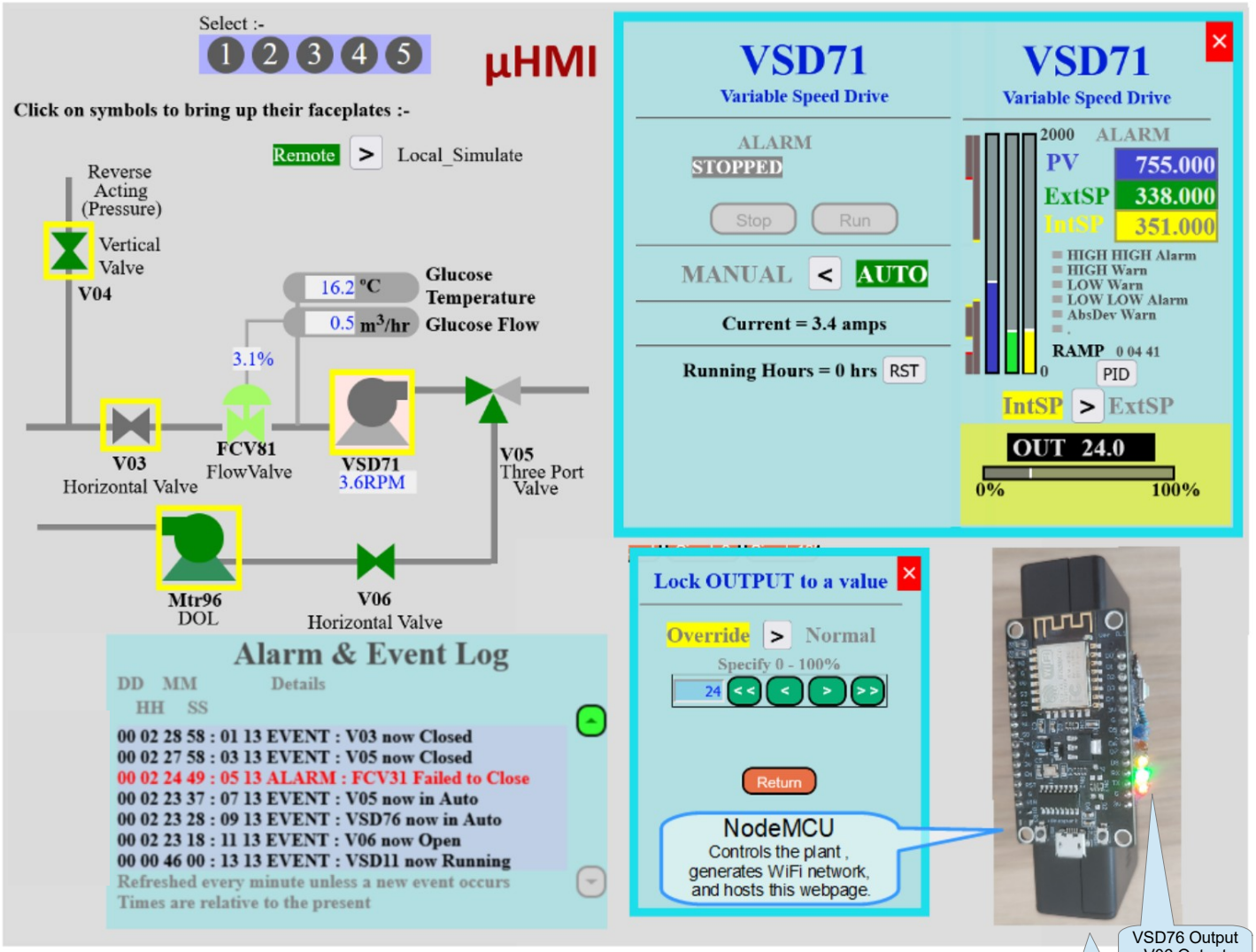
DeviceNet, Profibus DP & PA, Fieldbus, Hart, ASi

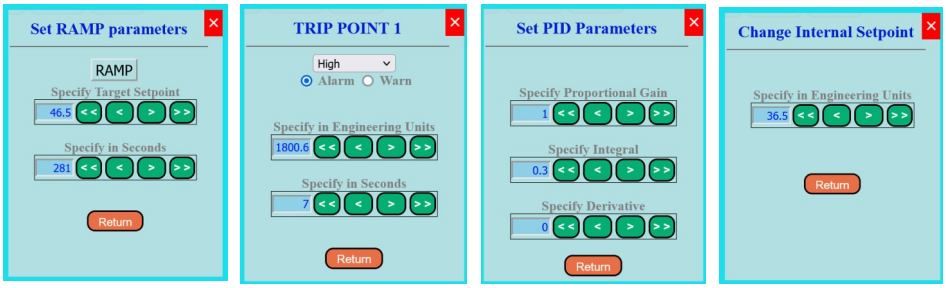
Naturally I also use many other software packages including :- SQL, Python, C , OO_Basic, RemoteDesktop, TeamViewer, VNC, VirtualPCs, VMware Workstation, Oracle VirtualBox, Acronis, WinAC, MicroWin, ProTool & Arduinos and RaspberryPi's, Putty, php, GitHub & VersionDog.
A project : **https://github.com/GregMc/MorseOnArduino** see my YouTube video from the GitHub link.

One of my Raspberry Pi s sits on my router as my webserver – hosting about ten websites and another is a universal configurator, my mini Fileserver running OpenMediaVault for video services.

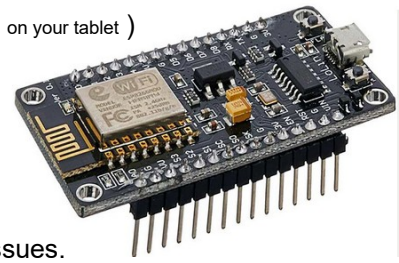
For more information:- Qualifications and History – Please visit my website **http://GregMcCormack.uk**

This µPLC_HMI project has been developed to show my passion for control engineering.
It can be used as a template for future projects or for educational purposes.





This microHMI shows the capabilities of this technology; accessed from the browser (on your tablet) the µHMI (Human Machine Interface) connects to the µPLC (Programmable Logic Controller) both generated from a NodeMCU board.
The PLC aspect controls the plant, whilst the HMI provides the user interface (The HMI only needs to be connected when needed – logging and event data is stored in the backend).



The NodeMCU can generate a WiFi network (or can hook up to an existing network), then provide a webpage from which you can monitor and control the plant.
This is all standalone – so not connecting to anything which could introduce security issues.
I have put the HMI code on my website, so you can run it from any browser and see how the front end operates.
I have also created YouTube videos which demonstrate both the NodeMCU as a Control platform AND my capabilities of writing quality code on the platform (all available from) :- www.gregmccormack.uk/microPLC_HMI
(It also provides a demonstration of my implementation of the intricacies of Control Engineering including comprehensive Duty Standby control).

With additional multiplexor boards expanding the IO - the NodeMCU has extensive capabilities and I am yet to find something it can't do. Opto Isolation and other protection can electrically protect the card. It can talk over many protocols so interfacing with existing plant is possible – although more immediately it is perfectly suited to stand alone systems.

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COURSES – Received and Given

Webinars : include C++ , Julia , NodeMCU

In the past I have been on :-

C++ , VBnet , Database Design (using MS Access as a platform)

- Industrial Chemical Engineering
- Yourdon – Real Time Structured Design
- Programmable Controllers :- AB G E SATT
- Scada Packages :- INTELLUTION, WONDERWARE
- Software Design
- Time Management
- Presentation Skills Course
- Simulator Software :- ProgSim

COURSES GIVEN

Siemens Moores 4-mation courses (I stood in for the normal trainer and gave in-depth (week long) training courses to both external clients and new recruits to the company)

HANDS ON

My experience includes :-

- Subroutines & Functions which are lift-able code segments which greatly reduces commissioning and validation times. Lift-able code segments also have matching graphics and their corresponding templates using indexing files.
- GAP Analysis – understanding client's needs and translating them into an efficient control strategy with enough user feedback and control to handle all situations, including failure modes and manual controls where needed.
- Route Cause Analysis and corrective action to limit downtime within the constraints of the environment.
- Data analysis and preparation of data for presentation on internal webpages.
- The simulator packages for bench testing software thoroughly on a break-to-fail approach rather than switch-to-run.
- Delivery of Management Analysis and top end sequencing for Batch Control systems – typically using SQL database with extensive event triggering.

ADDITIONAL INFORMATION

Please see my website for a greater appreciation of the scope of my career. The **EQIC** software was developed whilst I was a Domestic Installer (to better suit the needs of a young family). **EQIC** is for use by small businesses to help them with their **E**stimations, **Q**uotations, **I**nvoices and electrical **C**ertification – I have created a 100 page EQIC_UserGuide.pdf (5½ Meg) for the EQIC Software – which is accessible from my website. EQIC is entirely my own creation, from concept to customer ready implementation of the package and I have sold it many times over.

As a Domestic Installer, I had (and still have) many many happy customers only too glad to recommend my services which come with in-built - technical knowledge and confident advice.
Since returning to mainstream engineering, I have had to let my registration as a NICEIC Part P Domestic Installer lapse – however can obviously bring some very valuable experience and knowledge with me.

I am in the Bass section of the Liverpool Male Voice Choir and I am their Publicity Officer and Treasurer. I have developed **AccountKeeper** (UserManual.pdf - 1½ Meg) a sophisticated spreadsheet to keep the accounts of small businesses and organisations, and I have shared it online. Again is entirely my own creation, from concept to customer ready implementation. I have had compliments from Accountants in London, who praised the software – saying how easy it was to work with.

Please visit my website www.AllertonEPS-Software.co.uk - all the software found on this webpage is entirely all my own creation – seeing the need, finding the solution and making it available to everybody.