Hello,
I'm Joseph Harding

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Skills

Languages: Python, C++, Javascript, MATLAB, HTML/CSS

Frameworks/Tools: React, OpenCV , GitHub Actions, Jenkins, Git, ScikitLearn, SCRUM, KiCad

Certifications: Github Professional Certificate (Github,2025), Github Practical Actions (Github, 2025), Agile Software Development (Linkedin,2025)

Experience

2025 - PRESENT

Freelance Web Developer

Designing and Developing websites for a range of freelance businesses

-Using a range of languages and frameworks from HTML to javascript/React.

2025 - PRESENT

TAILWIND PERFORMANCE TIMING (Side Project)

I am currently trying to create the most accurate and customisable sprint/athletics timing system available! This is a side project for me, and more of a means to develop and display my skill-set. Includes:

-A React App that links via bluetooth.

-Custom Clock sync algorithm.

-Laser break detection.

(View more about the first prototype on my GitHub or website + further down in my CV)

Education

Cardiff Metropolitan University, Eureka Robotics Center(July, 2024)

Robotics Engineering(BENG) - IET Accredited
GRADE : *First Class hons*

Exeter College 3 A Levels. Mathematics, Physics, Music. GRADE : A*- C

To view my Projects, please see the next page.

Projects

NO1

AUTONOMOUS INVENTORY MONITORING ROBOT

This System consisted of a small 2 wheeled robot that could autonomously navigate any warehouse with guidelines, and detect a business's current available inventory at defined positions.
Key Features
OpenCV-Powered Navigation using cutting edge algorithms for positional awareness

- 4 ROS Nodes controlling different system aspects such as motor control, camera feedback, diagnostics, Robot Position control
- Convolution Neural Network trained on available inventory- Applied at each defined position
- Available inventory count + position feedback and confidence score, displayed to the user.

NO2

AI PRODUCTIVITY PREDICTOR BASED ON USER INPUTS

An Ai productivity tool based on factory worker inputs. The output is defined as either above 75% productivity should be achieved or below.
Key Features:

- Productivity prediction with high f1, precision, accuracy scores.
- Uses Binary Classification, data manipulation with Pandas, numPy.
- Utilises a custom Neural Network that is built using the sigmoid function and includes back propagation etc.
- Has the capacity to be trained using the genetic algorithm.
- Uses a Scikit Learn model to further the ML performance metrics

NO3

HIGHLY ACCURATE SPRINT TIMING SYSTEM USING PTP CLOCK SYNC

It uses 2 modules one for the start and one for the finish, with the potential for many other modules to track 10-20m etc. This system can set the athlete off using set and Go sounds from a small speaker and can measure reaction time with a tactile button + debounce circuit. It uses radio modules for communication and clock sync.
Key features:

- It uses PTP based timing inspired by IEEE 1588
- The system has a range of over 200m line of sights with no packet loss.
- It has built in software redundancies to ensure that the system always produces a result i.e. retransmission, signal strength and clock sync error, debounce code, streamlined non blocking code etc.
- Real world tests show sub 0.01 second accuracy at short distances, and high reliability.
- Battery Powered.

NO4

MARKETING AGENCY WEBSITE

This site is for a local marketing agency to display what they offer. It uses a range of advanced css techniques to create unique animations and responsive features.

Key features:

- Custom timeline that moves on scroll with the user
- Carousel, movable by mouse that displays their current and previous ads
- Many On scroll effects and a modern, sleek design.
- Clean and clear navigation.

NO5

CUSTOM REACT APP

I am currently building an app that goes alongside the sprint timing system to connect with the prototype i've built through bluetooth 5. This will contain athlete profiles, performance trends etc. Again it's another way for me to display my skills whilst providing usefulness to my training.