

Carl Lange

Senior Software Engineer

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Summary

I am a software developer with over a decade of experience in full-stack development, infrastructure, and technical problem-solving. I have worked extensively in startup environments and led major public-sector and environmental data projects.

I founded Trick16, a creative technical consultancy that supports artists and arts organisations in building interactive, web-based, and installation-based work.

I have contributed technical implementation to artistic projects exhibited in Dublin, New York, and online, with a focus on real-time interactivity, installation deployment, and accessibility across devices.

Experience

Trick16 – Founder / Developer

03/2021 - Current

Trick16 is a creative technical consultancy working with artists and curators to realise complex digital works.

I handle software development and deployment, translating technical constraints into artistic flexibility.

Selected Creative Projects

Foreignments – Moran Been-noon

Interactive web-based installation, 2021

Foreignments is a digital video art piece by Moran Been-noon, exploring themes of displacement, memory, and the politics of place. The project was commissioned for online exhibition by The LAB Gallery, Dublin. I was responsible for the technical implementation of the interactive browser-based version of the work.

The piece features a multi-channel video composition with layered audio, requiring careful handling of synchronisation, cross-platform playback quirks (especially on iOS), and user interaction. I built a custom frontend to support video/audio splitting, interactive layering, responsive design across mobile and desktop, and progressive enhancements like fullscreen handling and preload animation.

The final deployment was a portable static web app delivered to the artist for self-hosting at moranb.art/foreignments. All visual, conceptual, and editorial aspects were created by Moran Been-noon.

Fractured Landscapes / Fractured Space – Ellie Berry

Photography manipulation and live projection installation, 2021–2022

These two related works by Ellie Berry explored fragmentation, space, and perception through both still imagery and live, interactive installation. I was responsible for the software development.

Fractured Landscapes involved algorithmically reworking Ellie's landscape photographs by slicing them into horizontal and vertical bands and reordering those segments, creating disorienting, recontextualised compositions. The initial implementation was written in Mathematica, allowing Ellie to process and iterate on her images easily. I also developed a browser-based web app for image upload and transformation, enabling more accessible, real-time experimentation.

Fractured Space extended the concept into a live generative installation. A webcam feed was processed in-browser using optimised JavaScript with ArrayBuffers and low-level pixel operations to maintain performance.

The resulting live "fractured" projection ran at 30fps in a Dublin city centre exhibition space (in partnership with Ormond Studios), initially showing gallery visitors in real time, then later repositioned to capture the view through the window. The installation was later shown as part of an exhibition at the Irish Arts Center in New York City, where it ran continuously on a Kindle Fire tablet throughout the exhibition period.

All artistic direction, concept, and curation by Ellie Berry.

Angelica Network – [Angelica.network](#)

[Community directory website, 2023–2025](#)

Angelica Network is a volunteer-led initiative supporting women and minority gender artists and curators from under-represented ethnic or cultural backgrounds across Ireland. I was responsible for implementing and maintaining the website.

The site was built with Meteor and includes a custom backend that syncs artist data from a shared Google Sheet, enabling non-technical updates to the directory. I handled all development and hosting, working to an existing visual spec.

This was a straightforward build with some bespoke backend logic. The project concluded in September 2025.

Tough Soles Hiking Maps

[Openly licensed printable maps for Ireland's 42 National Waymarked Trails, 2018–present](#)

As part of our work on Tough Soles — the first documented walk of all 42 of Ireland's National Waymarked Trails — I developed a complete set of custom hiking maps using OpenStreetMap, government open data, and QGIS. The need for openly licensed, printable maps became clear during the project, as many trails lacked accessible or permissively licensed mapping resources.

Each map was designed specifically for offline use and is released under a Creative Commons licence. The full set remains, to the best of my knowledge, the only freely available map collection covering all National Waymarked Trails. The maps have been downloaded tens of thousands of times.

Open Data Engagement Fund – DPER

[Experimental data projects using Irish government open datasets, 2020–2021](#)

Cycle-to-School Scheme Report (2020): a speculative research and data visualisation project exploring the impact of a hypothetical cycle-to-school programme, based on cross-referenced public datasets.

Grapevine (2021): a prototype for a mobile AR experience using the National Inventory of Architectural Heritage and National Monuments Database, designed to encourage real-world engagement with Irish historical sites. The project remained in an early exploratory phase and was paused indefinitely due to the pandemic.

Professional Background

[Bernard Technologies](#) – Freelance Senior Software Engineer

[04/2023 - Current](#)

Maintaining and expanding a traffic-focused IOT sensor platform. Infrastructure, frontend, and general systems support.

[Hawa Dawa](#) – Senior Expert in Software

[10/2018 - 04/2023](#)

Led infrastructure, frontend, and developer workflows at an air quality monitoring startup.

Introduced Kubernetes-based development environment and improved overall system reliability.

[Derilinx](#) – Lead Software Developer

[12/2014 - 03/2018](#)

Architect and lead developer on [data.gov.ie](#) and various public sector open data platforms.

Fluid UI – Software Developer

04/2013 - 04/2014

Developer and internal tooling lead at a real-time design prototyping tool startup.

Game Closure – Game & SDK Developer (Internship)

03/2012 - 03/2013

Worked on SDK and internal tooling; contributed to open-source JS ecosystem.

Ericsson – Software Engineer (Internship)

05/2011 - 08/2011

Built browser-based data visualisation tools with D3.js and GWT.

Education

IT Carlow (now SETU) – Computer Games Development (incomplete)

2009 - 2012

Studied high-performance computing, maths, and 3D graphics. Left during final year to work in industry.

Other Projects

Tough Soles – Walking every trail in Ireland

2017 - Current

Alongside my partner, I walked and documented all 42 of Ireland's National Waymarked Trails. We filmed, photographed, and edited hundreds of videos and social media posts, and continue to run a YouTube channel with millions of impressions.

Flax Project – HTML5 Game Engine

2010 - 2011

Co-developed one of the earliest HTML5 game engines using Google Web Toolkit.