# MATTHEW MACLEOD

## Background

I am a cross-discipline systems engineer and technical leader with over 15 years of experience across multiple industries. My comprehensive skill set is applicable to a wide variety of fields. As an individual contributor, I have delivered state-of-the-art software and hardware systems for a diverse range of use cases; as a technical lead, I have successfully executed the planning and delivery of complex, highly technical projects, managing key technical programs.

I have experience working in both small and large teams and have managed engineering teams of up to 30 people, delivering challenging projects that incorporate a wide range of technologies. My unique skill set and experience across multiple domains enable me to play a key role in solving difficult problems, particularly those that involve the application of technologies from various fields. I am equally comfortable working as an individual contributor or as a technical leader and promote a pragmatic, high-performance engineering culture that emphasises accountability, open communication, and collaboration.

## Work Experience

**2014–Present** | **Dexory (Oxfordshire, England)** | **Lead Architect → Head of Software → VP Software and Systems**
Dexory is a startup delivering cutting-edge autonomous robots to the logistics industry—systems capable of automatically scanning and indexing the contents of the world's largest warehouses in a single day. I was the first hire on the team and led the design and implementation of the entire technology stack, including robotics, firmware, operating system, monitoring, admin tools, customer dashboards, and dozens of other features. As a technical leader, I scaled the engineering team to 30+ members through multiple funding rounds, supported the delivery of complex cross-functional engineering projects involving hardware, software, and electronics, and worked directly with customers to help them build and deploy solutions using our platform.

**2013–2018** | **Digital Science / Altmetric (London, England)** | **Senior Engineer → UI Lead**
Digital Science is a group of companies building software for scientists and the research community. In my role as an engineer, I worked with several teams and projects, including the development of modern macOS applications and high-throughput data collectors and pipelines that identified online discussion of scientific research in real-time. I was later promoted to lead the UI team, where I focused on ground-up re-implementations of our flagship internal and external web applications to meet modern technical and user experience expectations.

**2009–2013** | **tictoc (Glasgow, Scotland)** | **Software Developer → Technical Director**
Tictoc is a digital software agency building websites and apps for a client base of around 300 charities, educational institutions, and private businesses. Initially hired as a software engineer, I worked on general development tasks for these sites. I was later promoted to the studio's Technical Director, where I focused on updating the development tooling for the engineering team. This included introducing new technologies to streamline development, implementing testing and agile practices, and managing the day-to-day operations and workload of the technical team..

**2007–2009** | **Radge Media (Edinburgh, Scotland)** | **Creative Director → Technical Director**
Radge Media publishes culture magazines across the UK. I joined this team as my first role out of university, combining my experience in technology and graphic design as Creative Director, where I managed the design and layout for monthly magazines and publications. I later transitioned to head the company's digital strategy, where I implemented new systems for cross-channel online and print publishing. This project included complex data management tools and integration with multiple third-party data sources, enabling seamless content publishing across web, mobile, and print channels through various XML and JSON feeds, as well as integration with Adobe InDesign.

## Education

**2002–2007** | **University of Edinburgh**
**Master of Engineering (MEng Hons. 2:1) in Electronics & Computer Science**
This interdisciplinary degree covered the entire spectrum of computer systems and their implementation, including physical processor design, algorithms, programming languages, data structures, artificial intelligence, and user interfaces.

**Master's Thesis** A Dynamically Reconfigurable Cache Controller for Chip Multiprocessors
**Awards** Agilent Prize CSE3 for top performance in the third year.

**1997–2002** | **Bathgate Academy**
**Scottish Higher Grade** Mathematics (A), Chemistry (A), English (A), Information Systems (A), Music (A)
**Scottish Standard Grade** English (1), Mathematics (1), Computing (1), Chemistry (1), Physics (1), Accounting (1), German (1), Geography (2)

**Awards** *Dux Litterarum (2002)*

# MATTHEW MACLEOD

## Skills Summary

I have a diverse skill set across several technical areas, with key expertise in the following domains:

**Back-End and Platform Software Engineering**

- Architected and implemented high-performance applications, APIs, data processing pipelines, mobile and desktop apps, and other tools using a wide variety of languages and frameworks.
- Extensive knowledge of Go, Python, Ruby, Java, and C/C++ in large-scale production deployments, plus experience in multiple application-specific languages and tools.

**Front-End Web Engineering**

- Expert in developing and deploying compelling user experiences for web applications.
- Proficient in JavaScript, TypeScript, HTML, CSS, and APIs for highly interactive UIs (e.g., WebGL, WebRTC, Web Audio API).

**Technology and Project Leadership**

- Successfully assembled and led diverse, cross-functional teams of over 30 engineers, specialising in software and hardware integration projects.
- Notable experience in building and scaling effective, productive teams with a focus on a high-performance, collaborative, and transparent engineering culture.

**Strategic and Operational Support**

- Supported the scaling of a startup from a team of zero to 170.
- Developed and delivered product roadmaps, delivery strategies, OKRs, performance metrics, and review processes.
- Direct line management experience, helping teams develop and achieve personal performance targets.

**Solution Engineering**

- Extensive experience working directly with customer teams to implement technical solutions to key business problems.
- Comfortable working on-site with customers to install and commission systems.

**Cybersecurity and Data Protection**

- Implemented robust cybersecurity protocols and data protection measures for complex systems.
- Proficient in identifying vulnerabilities, conducting risk assessments, and developing mitigation strategies to safeguard sensitive information.
- Knowledge of regulatory compliance standards including GDPR, HIPAA, SOC 2, and ISO 27001.

**Robotics and Mechatronics**

- Designed and deployed some of the most advanced autonomous robot systems on the market.
- In-depth knowledge of ROS, ROS2, common robotics and autonomy algorithms and systems, 3D LiDAR data, and environmental reconstruction.
- Proficient in electrical and software integration with motors and actuators using a variety of hardware protocols.

**Machine Learning and Computer Vision**

- Built and deployed machine vision models for robotics and data collection, image segmentation, classification, OCR, and other real-world commercial applications.

## Example Projects

Here are some of the systems and projects I consider my key achievements over the past few years:

**Dexory's State-of-the-Art Barcode Scanning System**

This system, mounted on a moving autonomous robot, uses a distributed scanning pipeline equipped with 20 cameras across 8 or more commodity x64 systems, processing over 50 Gbps of image data in real-time. It extracts dozens of barcode types from images, filters them, and calculates their position in 3D space with centimetre accuracy. This was one of the first key systems I developed at Dexory and remains a prime example of scalable, well-designed architecture requiring minimal maintenance.

**Real-Time Forklift Detection and Localisation System**

This system uses a 3D RGBD camera combined with a custom-trained image segmentation model to identify and detect the forks of industrial forklifts. It then combines the data with depth information to generate an accurate bounding box for the forks in 3D space. Developed in around two weeks, this system was part of a prototype for Dexory's warehouse safety system, enabling safe, autonomous navigation. While later superseded by LiDAR-based safety systems, I was particularly pleased with the rapid and well-managed execution of this project—key factors in the process of evaluating and testing new technologies.

**Node-Based System for Defining and Executing Interactive Conversation Trees**

As part of Dexory's early work in robotics, we developed robotic systems supporting real-time conversational interactions with customers. This project involved creating a toolset to build and execute conversational UIs using a drag-and-drop, node-based interface inspired by those in DAW and 3D modelling applications. Integrated with platform-agnostic speech synthesis and recognition APIs, this system allowed untrained users to define interactive conversations with minimal effort. Although no longer relevant to Dexory, this remains one of the best UI projects I have worked on, offering both excellent UX and an elegant back-end implementation that delivered real user value.

**Contact** matt@matt-m.co.uk | github.com/mattmacleod | +44 7976 121 482