Tom Hirst-Dunton

Multi-discipline sceince & tech delivery · Small companies with big ideas

Oxford / London, UK

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Experience

Innersight Labs Ltd
Remote / London, UK

Engeineering, Management and Strategy Consultant
2022 - present

- Implemented regulatory strategy and roadmap for a software-as-a-medical-device product, targeting ISO 13485, EU MDR and US 510(k) certifications, and aligning with risk-management (ISO 14971) and SDLC (ISO 14764 and IEC 62304) standards
- Advised on corporate structure, revenue generation and hiring
- Designed lean engineering and quality workflows that are aligned with regulations and standards
- Developed frontend features for React and Angular applications, supported by RxJS
- Profiled and developed backend infrastructure for regulatory and performance-based data localisation
- Improved MLOps infrastructure by increasing reliability and reducing on-prem dependencies
- Added interactive functionality to an Angular and WebAssembly (Rust) application for annotating 3D images

Tech stack: Typescript, React, Angular, RxJS, Rust, WASM, Python, Bitbucket pipelines, Docker, Kubernetes, Git, Firebase & GCP serverless and on-premises, Linux

LabMinds Ltd
Oxford, UK

VP of Technology
2017 - 2021

Engineering

- Managed and delivered programmes of development, spanning chemistry, ML, electronics, IOT, networking, platforms, and frontend and backend software
- Rescued a major strategic project delivering a product line into a new and regulated target market, turning around customer/collaborator satisfaction with clearer communication and a record of hitting commited milestones on time and on budget
- Instituted a shift to make product reliability a first-class concern, with dedicated headcount, and a refocusing on the needs of front-line support
- Refocused DevOps to prioritise operational tooling and observability, which prioritised the empowerment of the Operations department
- Negotiated the successful, and often pioneering, installations of a cloud-managed IOT device inside the corporate networks of a majority of the global top-20 pharma companies, taking part in many security, data and networking reviews, and coordinating installations with customer IT admin teams
- Continued delivering product developments as an IC across the tech stack, alongside managerial duties
- Managed and contributed to compliance projects targeting various regulatory and standards frameworks: CE, GMP, GDP, GDPR, ISO 9001 and ISO 27001
- Worked with contractors to add new functionality to in-house-designed PCBs, reviewing changes, proposing rework and then assisting with component sourcing
- Designed and implemented departmental team structure, and inter- and intra-departmental processes, with workflows optimised around customer expectations for individual products and services
- Oversaw implementation of in-person regression-testing framework, incorporating realistic machine interaction and chemical verifications

Product

- Designed and implemented a new product process, with a focus on increasing stakeholder involvement and value assessment, while retaining agility and remaining lean
- Managed the release of product updates, including the provision of customer-facing notices to account managers
- Managed an IP portfolio including several patents at various stages of prosecution, along with trademarks and domain names

Corporate

- Developed a hiring workflow and sourced candidates to double the departmental headcount, with minimal disruption and a low turnover, supported by an OKR-based performance-review process
- Developed corporate strategy and budgets, and changes to corporate structure and departmental interfaces for a transatlantic and semi-remote organisation, as part of the management team, reporting to the board of directors
- Designed and implemented necessary and evolving communication and working policies for the entire UK-based workforce during Covid-19
- Sourced new office/lab facilities and designed the lab environment, negotiating a landlord-funded lab installation
- Managed the transition of the company into new facilities on several occasions, including designing and implementing or contracting the internal IT provisions, and the establishment of and hiring for an office management role
- Handled HR incidents of varying severity sensitively and pragmatically, to the mutual benefit of the employees and the company

Tech stack: Python, Django, C++, HTML, CSS, Javascript, Jenkins, Ansible, Vagrant, Prometheus, Mercurial, Git, AWS (EC2 and S3) and on-premises, Linux, OpenVPN, Arduino

Head of Software Engineering
2016 - 2017

- Instituted a mandatory code-review process, which contributed to a near-zero level of bugs appearing for quality-sensitive customers and increased consistency across the codebase
- Supported the team's professional development by implementing a performance-review process, when such a system wasn't in place elsewhere in the company

- Simplified hiring and on-boarding workflows, targeting first-day coding through a reduction in bureacracy
- Continued to develop both frontend and backend software features, alongside managerial duties
- Designed and managed a major architectural development project, providing a Python DSL that enabled chemical engineers to create machine-control scripts used to run a robot that produces custom chemical solutions
- Automated the deployment of the embedded firmware as part of software updates, in collaboration with the Hardware department, reducing version-consistency issues
- Collaborated with the Head of Hardware and the wider organisation on achieving CE compliance, making use of external consultants

SENIOR SOFTWARE ENGINEER / SOFTWARE ENGINEER   *2013 - 2016*

- Developed a new product for use at our contract manufacturer, and managed the delivery of the project, which provided an interactive testing platform used during product assembly with lifetime component tracking and a test audit trail
- Increased the robustness of the system architecture on headless IOT servers, which were installed at customer sites and connected by OpenVPN to our central servers, reducing the need for site visits
- Created a proof-of-concept machine-vision system to detect the liquid level in a mixing vessel
- Developed various frontend and backend features and an automated-testing framework for a Django web application and machine-control framework

The Mathworks   *Cambridge, UK*

APPLICATION ENGINEER (INTERN)   *Q2 2012*

- Integrated an open-source cancer simulation suite with Matlab, creating an interactive visualiser for simulations and a higher-level programming interface for the underlying C++ library

Tech stack: Matlab, C++

Surface and Nanoanalysis, National Physical Laboratory   *London, UK*

RESEARCH ASSISTANT (INTERN)   *Q3 2009*

- Synthesised carbon nanomaterial samples for Raman spectroscopic analysis and assisted with structural analysis using an electron microscope for a [research article](#)
- Demonstrated proof-of-concept electrochemical actuation using carbon nanomaterials
- Designed and assembled a prototype TIRF extension to a TERS microscope

Education ————————————————————————————

University of Oxford   *Oxford, UK*

DPHIL COMPUTATIONAL BIOPHYSICS   *2010 - 2015*

- Completed research and a [PhD thesis](#) supervised by Dr JM Osborne, Prof DG Gavaghan and Prof MSP Sansom
- Developed a bacterial membrane simulation package in Scala, with protein interactions parameterised using results from Molecular Dynamics simulations
- Published a [research article](#) in PLos Computational Biology

Tech stack: Scala, Python, Perl, Matlab, Tcl

University of Oxford   *Oxford, UK*

LIFE SCIENCES INTERFACE DOCTORAL TRAINING PROGRAMME   *2009 - 2010*

Courses: Data Analysis, Mathematical and Computational Biology, Statistical Genetics, Scientific Computation, Numerical Analysis, Stochastic Simulation
Research projects: Potts cellular automata simulation of membrane proteins; Discontinuous Galerkin finite element simulation of human airway contraction
Award: *Best Project* for Potts project
Tech Stack: Matlab, C, C++, R

University of Oxford   *Oxford, UK*

MPHYS PHYSICS, FIRST-CLASS HONOURS   *2005 - 2009*

Extracurricular Positions ———————————————————

Teaching Assistant, Life Sciences Interface Doctoral Training Centre, University of Oxford   *2010 - 2013*
President, Graduate Common Room, Keble College, University of Oxford   *2011 - 2012*
Departmental Student Representative, Computational Biology, University of Oxford   *2011 - 2012*