

## Objective & Skills

### Objective

A customer-focused software engineer with over ten years' experience, I specialise in developing scalable, data-driven solutions and engaging user experiences across a range of industries. My expertise encompasses the design and implementation of end-to-end data pipelines, IoT prototyping platforms, and high-fidelity prototypes, always employing a human-centred design approach.

### Skills

Software Development

Web - ReactJS, NextJS, Tailwind

Database - PostgreSQL

IaC - Terraform

Cloud - AWS, GCP

DevOps - Docker, Git, Tekton

Data Engineering/Visualisation

Pandas, Numpy, Plotly

Dagster, Dataflow, Dataform, Spark

Hardware Engineering

Embedded - Arduino, micropython

Prototyping - RaspberryPi, ESP32/8266

Protocols - MQTT, Websocket, HTTP

Emerging Technology

AR/VR - Unity, ARCore, Playcanvas

Certificates

AWS Certified Developer Associate

IBM Data Engineering Professional

Deep Learning Specialisation, Coursera

Machine Learning, Coursera

Languages

English (fluent)

Korean (mother tongue)

Japanese (fluent)

Chinese (advanced, C1)

German (intermediate, B1)

## Work Experience

### Ford Motor Company, Senior Software Designer

06. 2021 – Present | London, United Kingdom

#### FORDLive+ proactive maintenance

- Served as technical lead and primary implementer developing and deploying automated ETL pipelines on GCP for an internal operations team; engineered the system using Dataflow (streaming) and Dataform (batch) to scale for processing telematics data from 100K+ Ford Pro vehicles into BigQuery, streamlining workflows and supporting daily analysis.
- Embedded directly with the client's development team on-site, fostering a strong collaborative environment to co-engineer data pipelines and refine business logic tailored precisely to their operational requirements through iterative feedback and user research.
- Drove the infrastructure-as-code approach by provisioning the initial PoC environment using Terraform in GCP, and subsequently partnered with DevOps to establish automated CI/CD pipelines (Tekton) for reliable code promotion across environments.
- Designed and implemented interactive fleet insight dashboards using Plotly, transforming complex telematics data into clear, actionable visualisations that empowered stakeholders to monitor KPIs, identify trends, and make data-driven decisions to optimise fleet operations.

#### Distributed Prototyping Platform

- Led the design and development of a full-stack IoT prototyping platform (microservices architecture) to enhance developer experience and integrate technical prototyping into Ford's human-centered design process, specifically delivering high-fidelity prototypes for new EV digital services.

**Related Skills:** Platform Engineering · Git · Docker · DevOps · Software Architecture · API Development · Python · ReactJS · NoSQL · SQL · Cloud Platform (GCP, AWS) · Data Visualisation · Plotly · ETL Pipeline · Dagster · Usability Testing · User Research · Agile Development · UX Design · System Integration · Javascript · Typescript · ReactJS · Dataflow · Terraform · Dataform

### Indeed Innovation, Creative Technologist

05. 2017 – 04. 2021 | Hamburg, Germany

- **Consultative Project Leadership:** Led client engagements from initial pitch and co-creation workshops to regular progress reports, fostering strong client relationships and ensuring solutions directly addressed their needs across diverse sectors (Aerospace, medical engineering, home appliances, etc.).
- **Iterative, Client-Focused Prototyping:** Developed high-fidelity, proof-of-concept IoT prototypes (e.g., Smart Trolley, Digital Steam) in close collaboration with clients. This iterative process, incorporating direct client feedback, solved specific design challenges across various industries and transformed abstract concepts into tangible solutions.
- **Strategic Marketing & Client Engagement:** Supported key marketing events by delivering end-to-end implementation and demonstration of interactive installations. These installations translated emerging technologies into meaningful user interactions, directly engaging clients and showcasing the value of proposed solutions.

**Related Skills:** Fast-prototyping · Emerging technology · Technical consulting · Client management · Cloud Platform (GCP, AWS) · UX Engineering · Arduino · RaspberryPi · Hardware Software Interaction · System Integration · Android

## Samsung Creative Lab<sup>1</sup>, Creative Strategist & Developer

06. 2013 – 10. 2014 | Suwon, South Korea

- Led product strategy and development, in direct collaboration with the Korean Deaf Society, employing a user-centred design process. This involved stakeholder management, iterative prototyping (hardware with haptic feedback, Android music visualization app), and on-field user testing to ensure the solution met the specific needs of the deaf community.

## Samsung Electronics, Product Manager

01. 2011 – 12. 2014 | Suwon, South Korea

- Projects: Samsung Galaxy Tablet 10 Series, Google Nexus 10 (A joint-project with Google)
- Product Lifecycle Management: solved procedural issues during the entire product life cycle from the development stage to the end of production
- Regular project progress report to C-level representatives

## Education

### KAIST, Master of Science, Industrial Design (Human-Computer Interaction)

08. 2015 – 07. 2017 | Daejeon, South Korea

- Master's thesis: Calm Automaton, A DIY Toolkit for Ambient Displays
- Full scholarship

### KAIST, Bachelor of Science, Electrical Engineering

02. 2006 – 01. 2011 | Daejeon, South Korea

- Full scholarship

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<sup>1</sup> Samsung Creative Lab is Samsung incubation program for Samsung employees to incubate creative ideas into real projects