

Joseph Cooper



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Profile

I am a self-taught programmer, passionate about software engineering and enthusiastic about making a difference to people's lives. My natural critical thinking skills and precise communication abilities have been refined and strengthened by my education and work in mathematics. I have excellent interpersonal and organizational skills, gained and improved through my broad employment and wider life experience.

I am particularly engaged with producing correct, understandable, clean and secure code in collaboration with others. I enjoy following developments in software maintainability by contributing to open source, discussion with more experienced developers, and extensive reading.

Technical Skills

- TypeScript
- PostgreSQL
- LaTeX
- React/Vue
- git/mercurial
- Haskell
- FireBase NoSQL
- Rust
- Java
- Docker
- Linux
- Kotlin
- Gradle
- Android development

Projects & Open source contributions

Gratitude Journal webapp

- Mental health/wellbeing tool to aid with gratitude practice
- Local-first design, allowing cross-device synchronization
- TypeScript
- Vue
- GitHub Actions CI
- CD to Netlify

ktfmt

- Kotlin code formatter, maintained by Meta, used globally
- Improved usability/maintainability/documentation of CLI
- Fixed several critical CLI bugs
- Kotlin
- Maven

DWP Abbreviation quick find web app

- Solves problem of quickly finding the meaning of DWP abbreviations (over 2000 in regular use)
- used by DWP employees, speeding up processing of pension changes
- Web frontend
- Rust
- React-like framework
- GitHub Actions CI/CD

Audio book player web app

- Cross-platform audio book app to help children sleep
- Supports wide range of browsers and versions
- Java/Kotlin + Spring Boot backend
- JavaScript/TypeScript + React.js frontend
- Deploys via Docker

Android librarian app for paper maps

- Helps to plan outdoor trips by quickly finding maps for geographical area, showing which are already owned
- Works both offline and online
- Kotlin/Java
- Firebase NoSQL backend
- Test suite on GitHub Actions CI

Weekly task review tool

- Adds tasks completed in prior week to draft Wordpress post
- Microservice
- Kotlin + http4k
- uses rememberthemilk.com and Wordpress REST APIs

Other open source contributions include

- kotest – Kotlin testing framework
- kotlin-result – Kotlin Result type
- RxBinding – RxJava bindings for Android UI toolkit

Education & Qualifications

Algorithms, Part 1 – Princeton University via Coursera	2021
FP101x: Introduction to Functional Programming – TU Delft via edX	2014
Master of Mathematics (MMath) – University of Newcastle	2008

Employment History

Administrative Officer – DWP, Retirement Services Directorate	2022 – present
Responsibilities: <ul style="list-style-type: none">processing changes of details for State Pension customersresponding to State Pension customer inquiries received via postaccurate communication of work done and in progress Skills: <ul style="list-style-type: none">asynchronous team communication in hybrid working environmentworking/communicating with many teams across Retirement Servicesexperience of DWP software (e.g. Searchlight, GYSP, PSCS, PTP CAM)	
Volunteer bike mechanic – Recyke y'Bike, Byker, Newcastle Upon Tyne	2020 – 2022
Responsibilities: <ul style="list-style-type: none">refurbishing donated bikes for sale or giving to disadvantaged peopleaccurate and comprehensive communication of in progress workmaintenance of workshop and toolsbreaking down of unsalvagable bikes into recyclable and scrappable parts Skills: <ul style="list-style-type: none">solving problems with limited resourcesteaching less experienced colleaguesorganization of working environment	
English Language Teacher – The Dawson Group Italia, Parma, Italy	2015 – 2017
Educom GmbH, Salzburg, Austria	2012 – 2014
Responsibilities: <ul style="list-style-type: none">teaching English to professionals in industryteaching English to small groups of private studentsaccurately assessing existing skills and needs of studentsproviding curricula to meet the needs of students Skills: <ul style="list-style-type: none">inter-language, cross-cultural communicationtime management, making best use of lesson time	
Postgraduate Mathematics researcher – Heriot-Watt University, Edinburgh	2008 – 2012
Responsibilities: <ul style="list-style-type: none">conducting original research in mathematicscommunicating research progress and results to mathematical communityorganizing weekly postgraduate research presentation sessions Skills: <ul style="list-style-type: none">conducting researchself-organizationwriting for an expert audiencepresenting technical materialanalytical reasoning	