Justin Malčić

I'm a recent MSc CS graduate from Imperial, with ten years' web dev experience from a mix of volunteering and personal projects.

Education

Imperial College London Computing MSc
2022–2023 Merit

Individual project AST-aware version control system
Prototype VCS tracking AST mutations (not plaintext) in a language-independent format, to allow more granular and intuitive change history, and more extensive and accurate automatic conflict resolution.
Language Server API used to create temporary source trees with syntactic features and random node IDs. File modifications drive continuous subtree matching on syntactic features, to keep IDs stable across edits. ID set comparison, and node pair equality checks for parent and position, give changes between base and revision. Commits record tree mutations—insertion, deletion, transposition—not unstructured diffs. IDs allows 'identical' nodes with distinct origins to be distinguished over time.

Group project control interface for IoT cooperative art experience and psychology experiment
Rebuild of pilot web app for controlling experiment involving fleet of Raspberry Pis, using Flask and Hotwire, with emphasis on future extensibility and ergonomics. New concurrency design decoupling server and video stream control to avoid server restarts, dynamic discovery and display of other experiment participants using mDNS, ability to run and display live output of Ansible provisioning operations across fleet, and other UX and UI improvements.

University of Maryland Linguistics MA
2019–2022 4.0 GPA

University of Cambridge Linguistics BA
2016–2019 First class (final year and overall)

Other projects

JS autoloader for Rails asset pipeline
Sprockets import map processor to allow plugins to produce shared asset manifest. Asset autoloader improvements to support plugins.

Conference management system
Full-stack development of conference management system allowing backend management and frontend viewing of conference data. Features pending deployment include basic shared webmail for conference organisers, and accounts for conference delegates. Implemented as multiple Rails plugins extending Spina CMS, with public frontend using GitHub's Primer design system.

Related activities

Hack Cambridge
2017–2019
Extended and extensively refactored Express, Sequelize, and Postgres backend of application system and static site of university hackathon to improve maintainability and rationalise dependencies; redesigned and reimplemented frontend to take advantage of latest CSS features.

Indulge Media
2015
Placement at digital agency: built landing page and fixed browser-specific UI bugs.

Miraberis
2014
Developed simple online shop with cart functionality for Young Enterprise company.

Technical skills

Fluent
Ruby, Rust, C++, Swift, JavaScript, Ruby on Rails

Familiar
SQL, Sass, iOS and macOS development, Java, Python, TypeScript

Languages

French (C1), German (C1), Italian (C1)

Contact

+44 7397 308 360
justin@malcic.codes
malcic.codes
github.com/jmalcic