

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 in Rust tracking syntax mutations in a language-independent format, for more granular and intuitive change history, and more extensive and accurate automatic conflict resolution. Temporary syntax trees constructed for arbitrary languages using Language Server APIs, with real-time subtree matching and tracking of mutations driven by FS events. Random node IDs generated on creation and kept stable through subtree matching allow node identity to be traced through history, a resolution algorithm operating on sets of node IDs without extensive tree comparison, and distinction of superficially 'identical' nodes with distinct origins. Commits record tree mutations referencing node IDs, so support more flexible reordering.

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

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