

Justin Malčić

Education

Currently applying for master's courses in Computer Science for entry autumn 2022.

University of Maryland Linguistics MA

2019–current

4.0 GPA

Ongoing research on implications of a natural language phrase structure universal for theories of linearisation, and ways of deriving appropriate constraints on displacement.

University of Cambridge Linguistics BA

2016–2019

First class (final year and overall)

Starred first class dissertation on order-theoretic theory of phrase structure and displacement in natural language. Won LAGB prize for Outstanding Undergraduate Dissertation in Linguistics.

→ Uses Order Theory to derive properties of phrase structure necessary when linearising structure for pronunciation, and develops a parallel representation of displacement accounting for substantive restrictions.

Projects

AST-based diffing for Git (ongoing)

Git extension in Rust to allow diffing using ASTs generated by language servers, resulting in diffs of syntactic structures of files, not lines. Intended to allow automatic conflict resolution in many scenarios currently requiring manual resolution, and automatic correct handling of significant and insignificant whitespace.

Implementing an experimental language (ongoing)

Interpreter in Rust for experimental language inspired by Swift, Rust, and Ruby. Aiming to explore type-driven memory management and concurrency model from Rust, and eventually target LLVM.

JS autoloader for Sprockets

Implemented import map processor for Rails asset pipeline to allow multiple Rails plugins to produce single JS asset manifest. Made improvements to asset autoloader to support plugin path structure.

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 implementing UI components from GitHub's Primer design system.

Other 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, and redesigned and reimplemented frontend to take advantage of latest CSS features.

Indulge Media

2015

Brief work experience for web 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, Swift, JavaScript, Ruby on Rails

Familiar

SQL, Sass, iOS and macOS development, TypeScript

Languages

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

Contact

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