

CodeFlow



Funded by
the European Union



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and Innovation

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Code Flow is released under the MIT License via the GitHub repository.

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The code can be accessed and downloaded from its GitHub repository; <https://github.com/erikbranmarino/CodeFlow>

Researchers



- Erik Bran Marino
- Davide Bassi
- Jesús Benítez Baleato
- Renata Vieira

These researchers are affiliated with Universidade de Évora and CITIUS-Universidade de Santiago de Compostela

Summary

CodeFlow is a research tool tailored for Digital Humanities and Social Science research that automates code generation and refinement through iterative dialogue with large language models (LLMs). By handling technical implementation details automatically via an iterative debug-fix loop requiring zero manual intervention, CodeFlow enables researchers to focus on their core questions while maintaining computational rigor.

What We Offer

- **Automated Workflow Orchestration:** A system that translates natural language research goals into functional code.
- **Iterative Debugging Loop:** An automated mechanism that captures execution errors and queries the LLM for corrections up to 10 iterations.
- **Safe Execution Environment:** Handlers designed for safe code execution and error capturing during the generation process.

Key Features

- **Zero Manual Intervention:** Fully automates the debug-fix cycle.
- **High Performance Generation:** Achieved 95% accuracy and F1 score on automated implementations for sentiment analysis benchmarks.
- **Research-Focused Interface:** Designed specifically for non-programmers requiring computational analysis tools.

Collaboration Objectives

- **Digital Humanities Scholars:** Automate tasks like literary text sentiment analysis or corpus linguistics.
- **Computational Social Scientists:** Support the implementation of scripts for social media tracking and survey response analysis.
- **Software Developers:** Collaborate on adding multi-LLM support and enhancing security protocols.