



Building Practical Distributed Algorithms

From traditional cloud computing and datacenter management to peer-to-peer applications, all the way to modern permissionless blockchains: distributed algorithms have become a fundamental building block of our digital world. Still, the broadcast and consensus algorithms that power these large systems are oftentimes very complex, and hard to reason about.

Mir is a novel framework that makes implementing, debugging, and analyzing distributed protocols much easier.

In this project we aim to leverage Mir to build a tool that allows researchers, developers and students alike to gain additional insights into distributed algorithms. We believe that this framework will have the potential to significantly support the development of new algorithms, by allowing faster implementing, debugging and better insights. Once an algorithm is developed, our tool can also help visualize it and explain it to others. Moreover, it could be used in teaching, both during lectures and hands-on exercises.

In a first phase we shall build the interface to the Mir framework, while in a second phase we will focus on debugging and visualization using a Web framework. This project allows you to get intimately acquainted both with distributed systems and web engineering.

Requirements: Knowledge of the Go and JavaScript programming languages is a plus. We will have weekly meetings to discuss open questions and determine the next steps.

Interested? Please contact us for more details!

Contact

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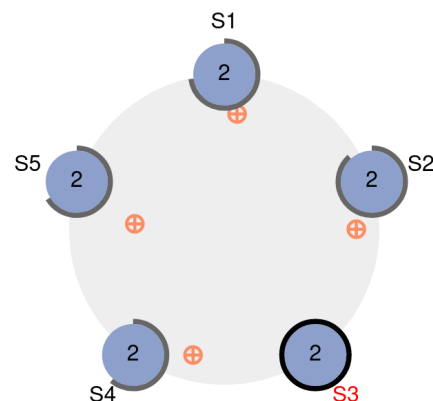


Figure 1: What a visualization could look like. Taken from the [raft visualizations](#).