Speaker: Beatriz Alcaide García

Title: MongoDB specification in Maude

Abstract: MongoDB is a distributed NoSQL database management system that employs a document-oriented data model, enabling the storage of semi-structured data in a flexible format. Maude is a high-performance declarative language based on rewriting logic, designed for specifying and verifying complex systems. This thesis presents a formal specification of MongoDB as a distributed database system using the Maude language. The specification supports creating databases, creating unsharded collections, creating sharded collections, document insertion, and document querying. It also supports range queries through different operators.