

Type and proof structures for concurrency

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on line - <https://meet.google.com/yfw-wbjz-xvv> - martes 19 de abril de 2022 - 16:00

Entrada libre hasta completar el aforo

Resumen:

The main challenge of concurrent software verification has always been in achieving modularity, i.e., the ability to divide and conquer the correctness proofs with the goal of scaling the verification effort. Types are a formal method well-known for its ability to modularize programs, and in the case of dependent types, the ability to modularize and scale complex mathematical proofs. In this talk I will present our recent work towards reconciling dependent types with shared memory concurrency, with the goal of achieving modular proofs for the latter. Applying the type-theoretic paradigm to concurrency has lead us to view separation logic as a type theory of state, and has motivated novel abstractions for expressing concurrency proofs based on the algebraic structure of a resource and on structure-preserving functions (i.e., morphisms) between resources.

Sobre Aleks Nanevski:

Aleks is a associate research professor at IMDEA Software. Before that, he obtained a PhD at Carnegie Mellon University, and has worked as a postdoc at Harvard University and Microsoft Research in Cambridge. This talk will be on the topic of his ongoing ERC Consolidator grant.