**Aspiring PI Info:**
- Konstantinos Kallas
- Assistant Professor of Computer Science
- University of California, Los Angeles

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## Research interests:

High performance software systems with correctness guarantees

Areas:  Systems, Programming Languages, Compilers, Formal methods

## Current Project(s)

PaSh: Automatic parallelization and distribution for shell scripts with correctness guarantees

[NSDI 23, OSDI 22, EuroSys 21, ICFP 21, HotOS 23, HotOS 21]

High performance cloud native computing with correctness guarantees (serverless + μservices)

[NSDI 24, POPL 23, VLDB 22, OOPSLA 21]

## Project Idea(s)…

Correctness checker for shell scripts

- Scripts are critical infrastructure (also in cloud)
- Hard to get right and hard to migrate from
- No FM because of shell challenges
- Insight: use PaSh ideas to address challenges

Verified cloud-native apps

- Many applications today are cloud-native
- Compositions of components (stores, queues, λ)
- Hard to reason about
- Insight: Cloud platform specs

## … thoughts?