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Robust orchestration of concurrent application workflows in mobile device clouds

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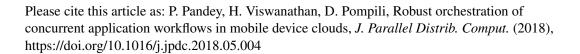
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*Highlights (for review)

Highlights:

- A hybrid mobile/fixed device cloud, Maestro that harnesses sensing, computing, communication, and storage capabilities of devices in the field as well as those of in remote datacenters is proposed.
- The key components of Maestro are (i) a task scheduling mechanism that employs controlled task replication in addition to task reallocation for robustness and (ii) Dedup for task deduplication among concurrent pervasive workflows.
- An architecture-based solution that relies on task categorization and authorized access to the categories of tasks is proposed for different levels of trust.
- Experimental evaluation through prototype testbed of Android- and Linux-based mobile devices as well as simulations is performed to demonstrate Maestro's capabilities.

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