



NSF Campus Cyberinfrastructure PI and
Cybersecurity Innovation for Cyberinfrastructure PI Workshop
October 3-4 | Albuquerque, New Mexico

NSF Program: CICI

Award Number: 1642120

Program Area: Secure and Resilient Architecture

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Project Title: Campus Infrastructure for Microscale, Privacy-Conscious, Data-Driven Planning



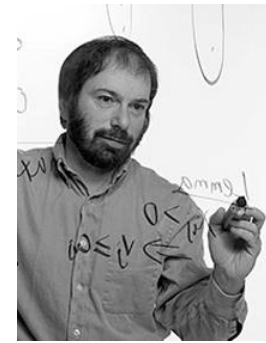
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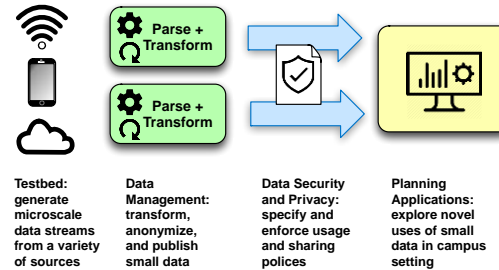
Challenges:

- Overall goal is to enable data-driven planning using “microscale” data streams while respecting personal and institutional privacy policies
- Need distributed data management platforms with built-in support for fine-grained data sharing policies
- Need access to research testbeds and real-world data streams
- Need mechanisms for specifying and enforcing fine-grained data policies

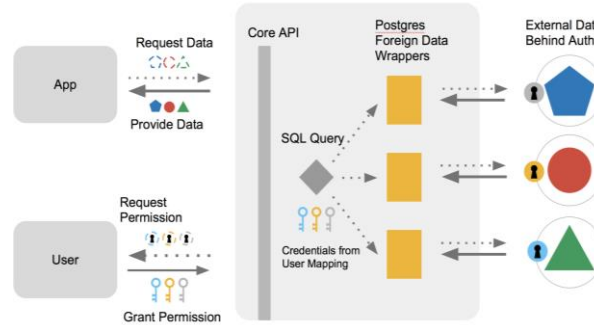
Solutions:

- Core: a distributed data management platform with built-in capabilities for transforming, anonymizing, and publishing microscale data
- An expressive framework for specifying and enforcing data sharing policies
- A research testbed spanning two campuses (Ithaca and NYC) with microscale streams obtained from campus infrastructure
- Novel applications of microscale data to solve data-driven planning problems related to transportation, space, and food

Overall Architecture



Core Platform



Broader Impacts:

- Building an open-source software platform for managing distributed microscale data
- Exploring novel solutions to privacy issues that arise with microscale data, which is a growing concern in modern society
- Building inter-disciplinary bridges between different intellectual fields, computer science and operations research
- Developing masters-level projects in two areas: systems and data-driven planning

Website:

<https://ancile-project.github.io>

Logo:



Ancile