

Open-source Campus

An Analglph of Google
Earth's 3D model of
UIUC's Engineering
Campus



Bradly Alicea
**Rokwire Initiative, Orthogonal Research and
Education Lab**

Vision: making information technology across campus amenable to the open-source ethos

Enabling technologies

Governance

Engagement

Ethical Issues



Open Source

Software for which the original source code is made *freely available* and may be *redistributed and modified* (under license).

Software is “free” or “libre” in accordance with the [Free Software Definition](#) and [Definition of Free Cultural Works](#).

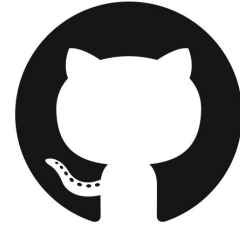
Open Source

Publicly-available source code.

Free distribution and remixing.

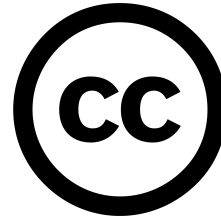
Technology neutral.

Versioning (and transparent control).



Open Source Code

<https://github.com/rokwire>



Distribution/Remixing

<https://creativecommons.org/licenses/>

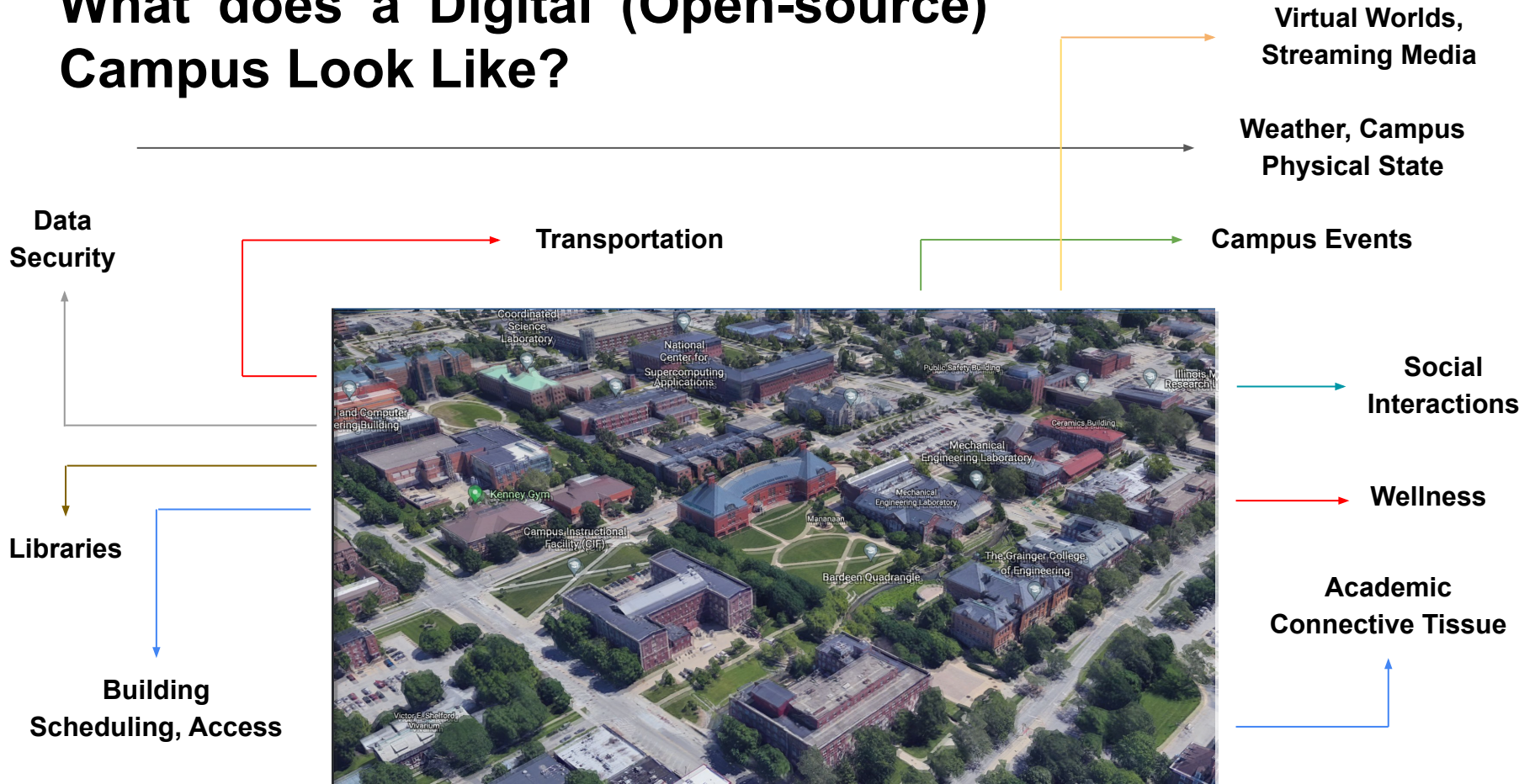


Version-control



Neutral Distribution

What does a Digital (Open-source) Campus Look Like?





Platform for developing mobile applications that enables smart communities

Illinois App, Safer Apps (Illinois, Communities)

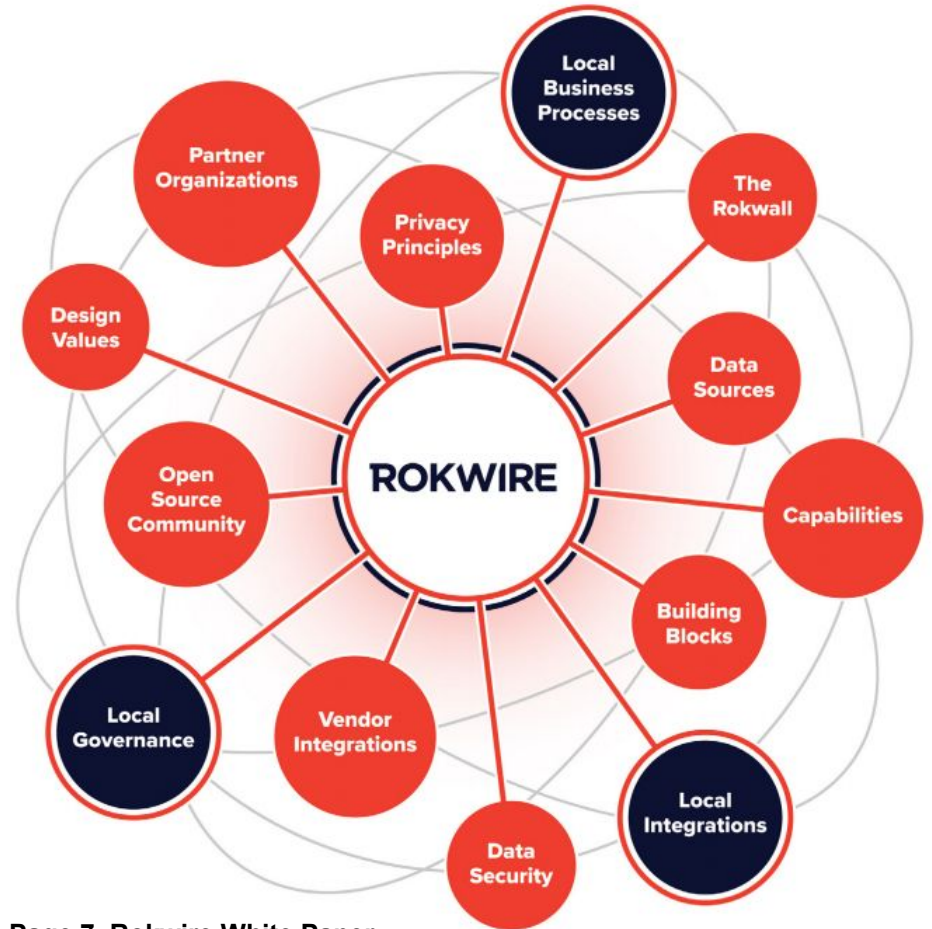
Leverage mobile apps to realize smart, healthy communities (campus initiative)





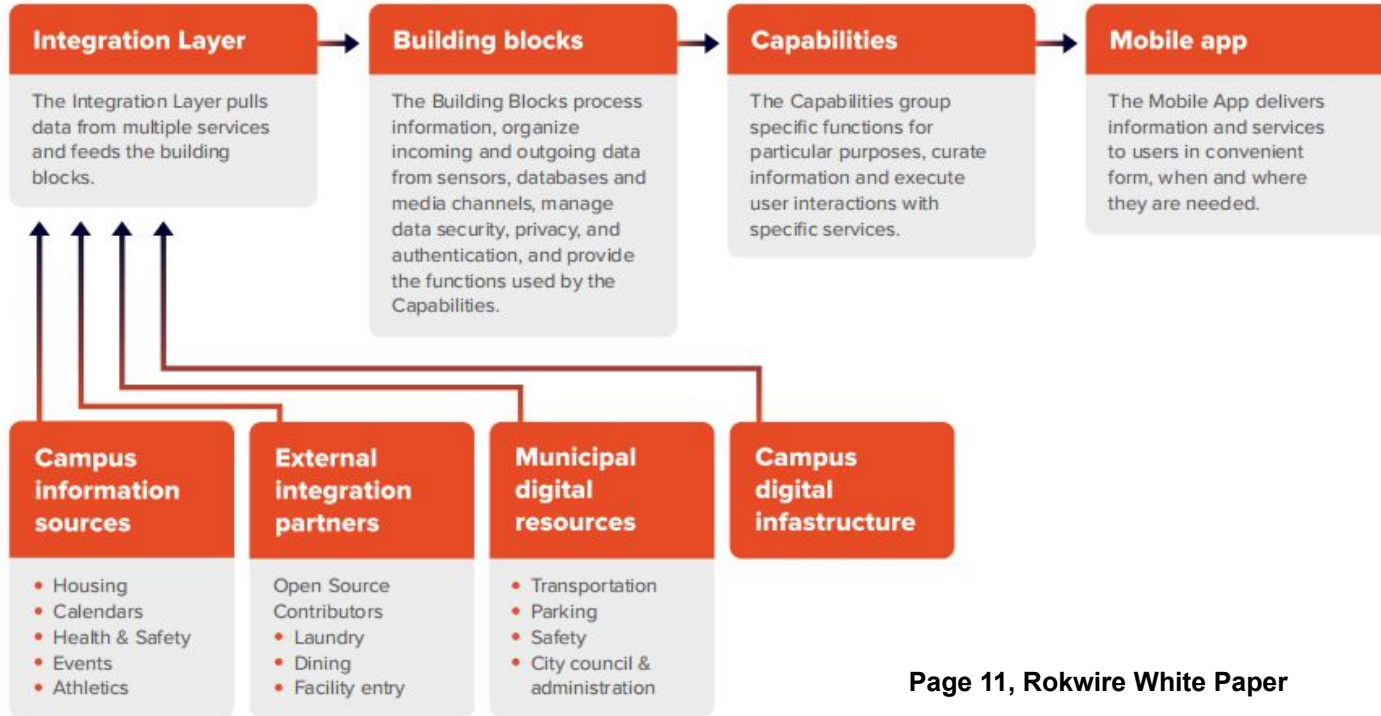
Ecosystem

Diverse group of interests
from across campus.





From the Inside Out

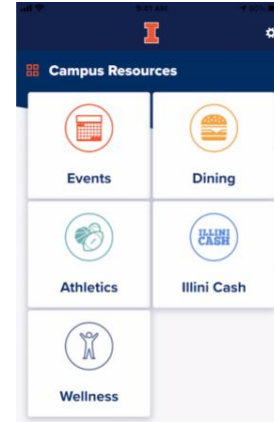
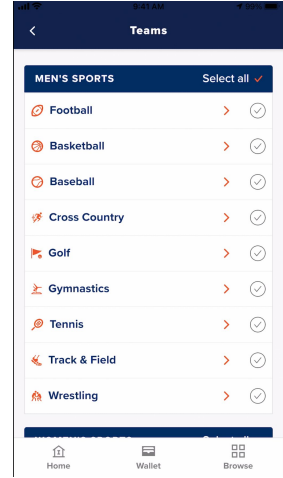
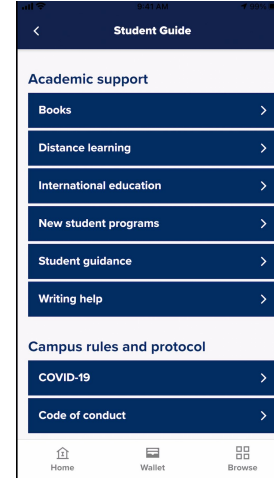
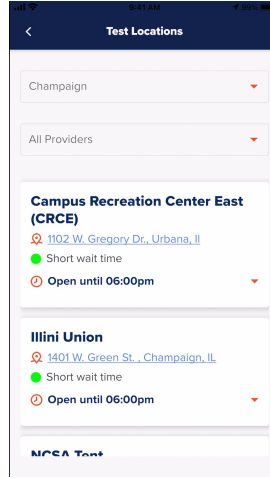


Enabling Technologies

Campus Apps



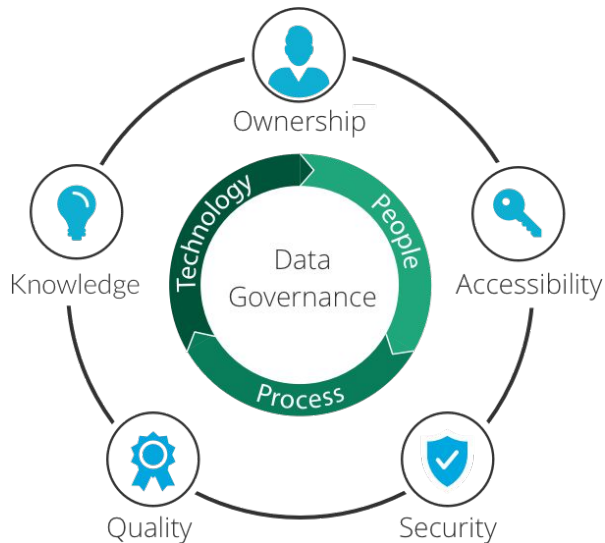
Rokwire allows us to build an architecture for a digital campus. We can build on top of this, or make it open-source. What are the implications?



Enabling Technologies

How do we manage data that is available to our campus apps and mobile infrastructure?

Data Governance

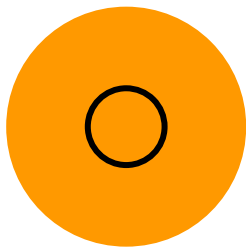


A balance of:

- open information (knowledge and accessibility).
- verification (ownership, quality, security).

Governance:

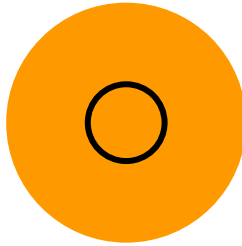
- requires people to act collectively in a digital setting.
- also requires a set of processes and procedures, navigate conflicts of interest.



General schema for an open-source campus.

Bradly Alicea, Open Source Campus.

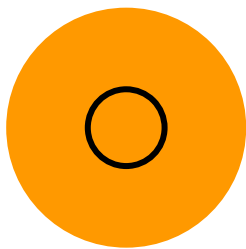
Jinal Mehta, Campus Apps in North America (with Isaac Galvan on the Illinois App).



General schema for an open-source campus.

Rokwire Building Blocks API (source code).

<https://github.com/rokwire/rokwire-building-blocks-api>

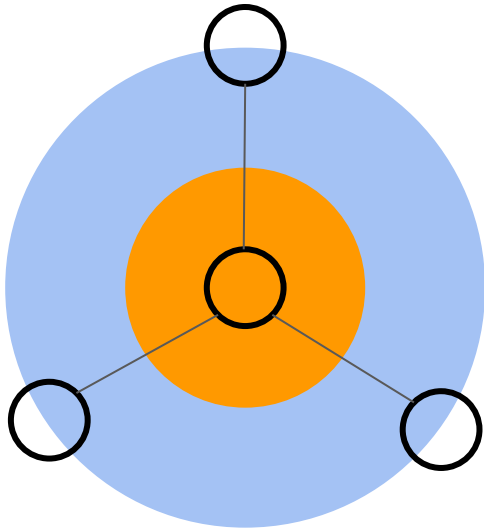


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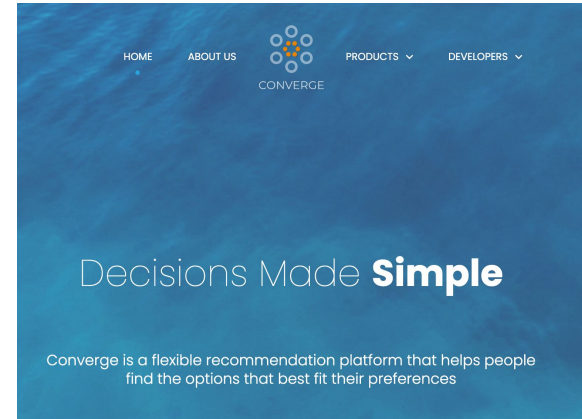
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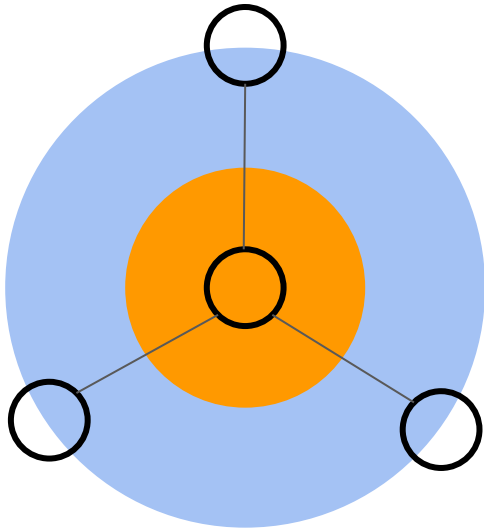
Ability to explore the code and move towards building customized content.



Leverage the mobile app that build representations of the open-source campus.



<https://www.converge-engine.com/>

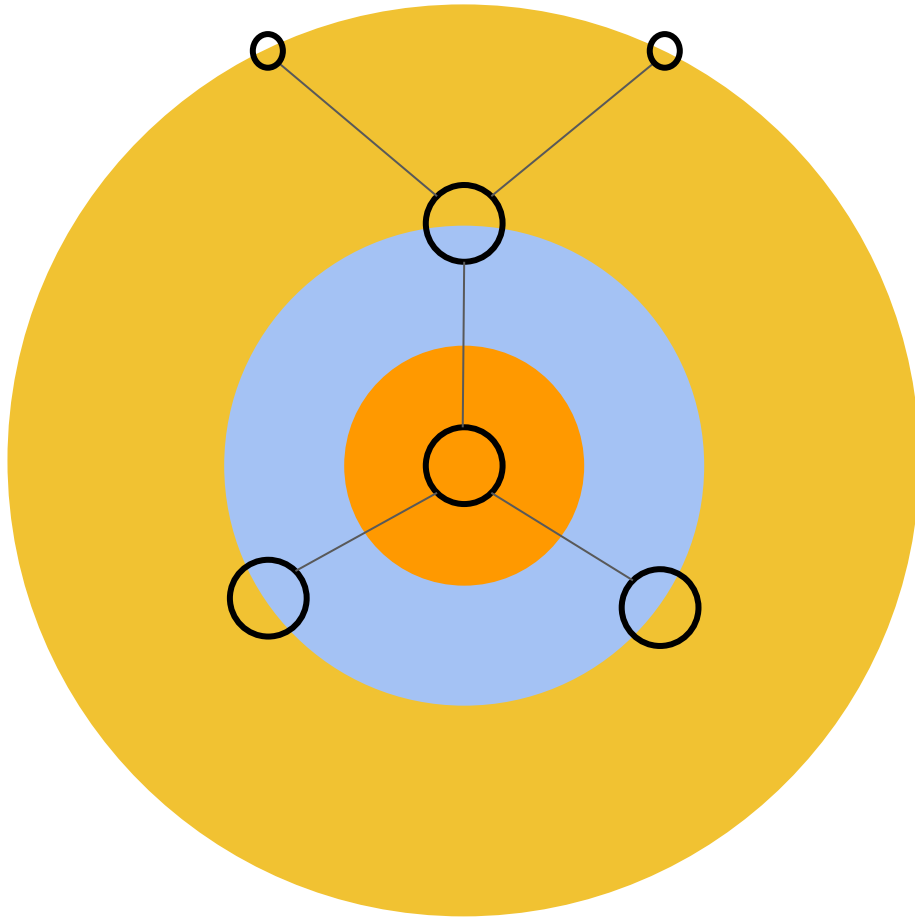


Leverage the mobile app that build representations of the open-source campus.

Mobile Social Science research to Edge Computing:

Peter Ondish, Social Science Research and the Rokwire Platform.

Robert Belson, Unpacking 5G.

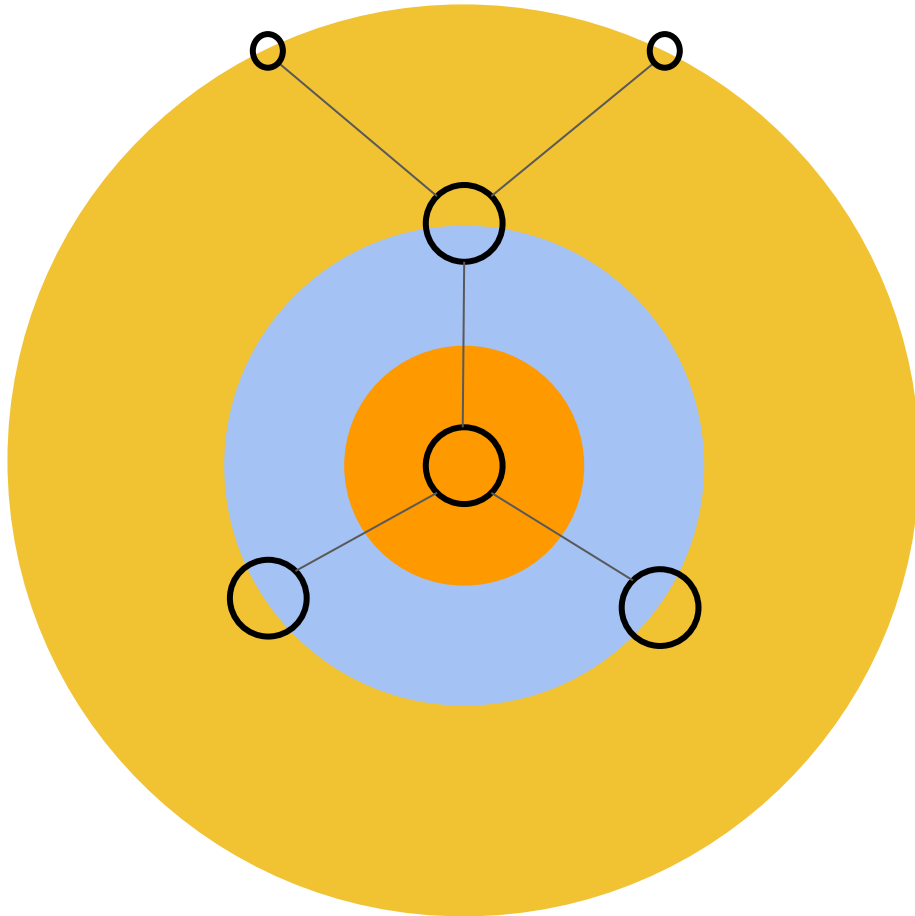


Customized interfaces that are built upon campus representations.

Focus on Human-Computer Interaction and Human-Human Interaction

Angela Risius, Data Trusts.

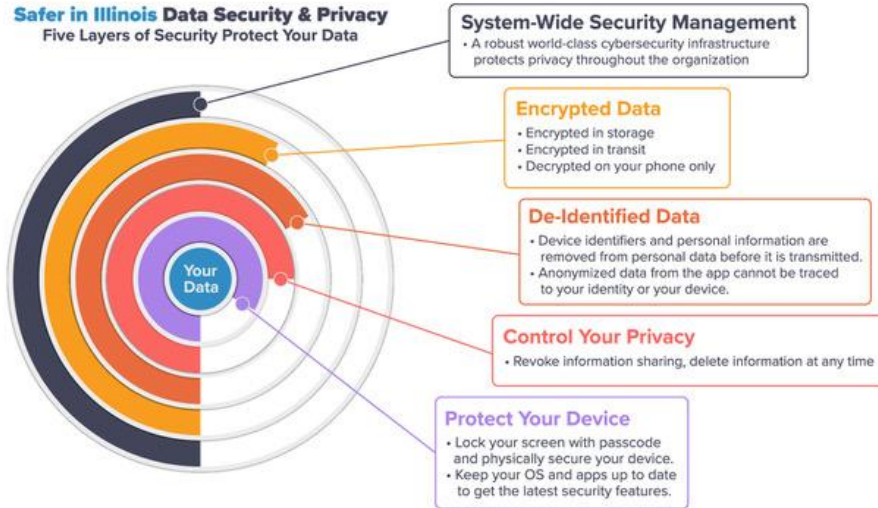
Yun Huang, Designing Conversational AI to Provide Guidance on Skill Training.



Customized interfaces that are built upon campus representations.

- software engineers to build campus representations.
- designers and subject specialists to build talents.
- documentation people to describe the specifications.
- maintainers and ethicists to engage in governance.

Data Handling on an Open-source Campus



Oversight: data trusts, de-indentification of data.

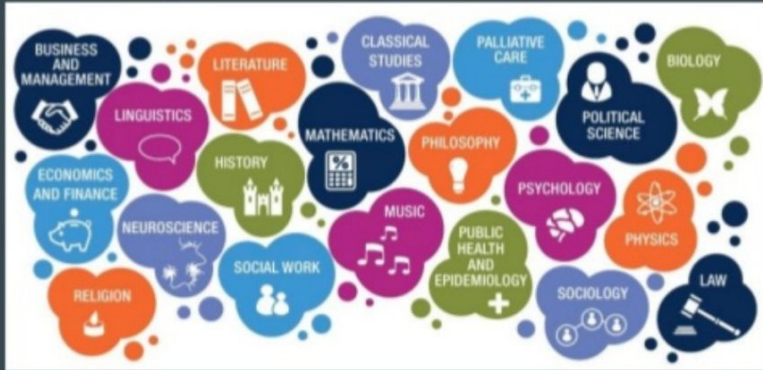
- encryption and tracking: transparency with secure access.
- not everything needs to be open-source (proprietary, secure components).

Safer Illinois safeguards: how to manage personal data during a pandemic response.

Engagement and Design

Interdisciplinary Education

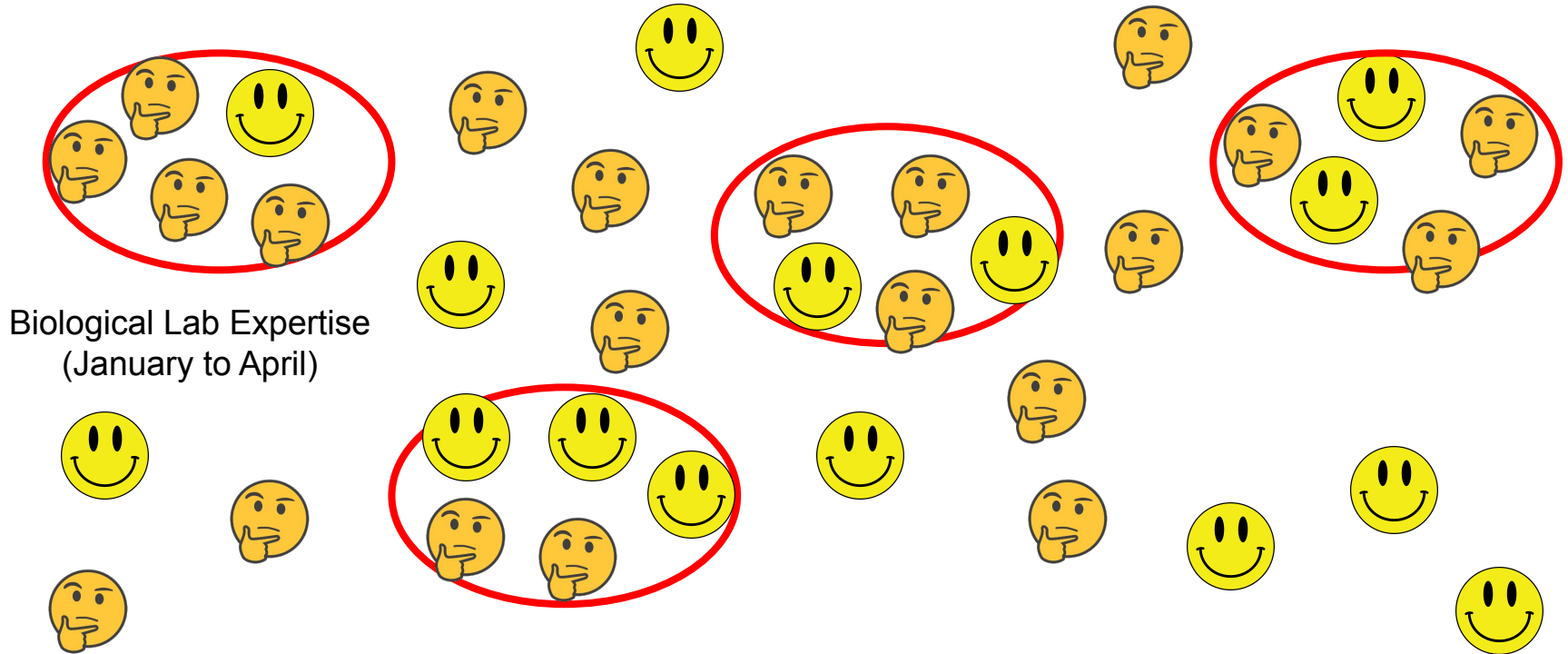
Challenges of Interdisciplinarity



Interdisciplinarity involves learning new skills and easily switching between disciplinary expertise.

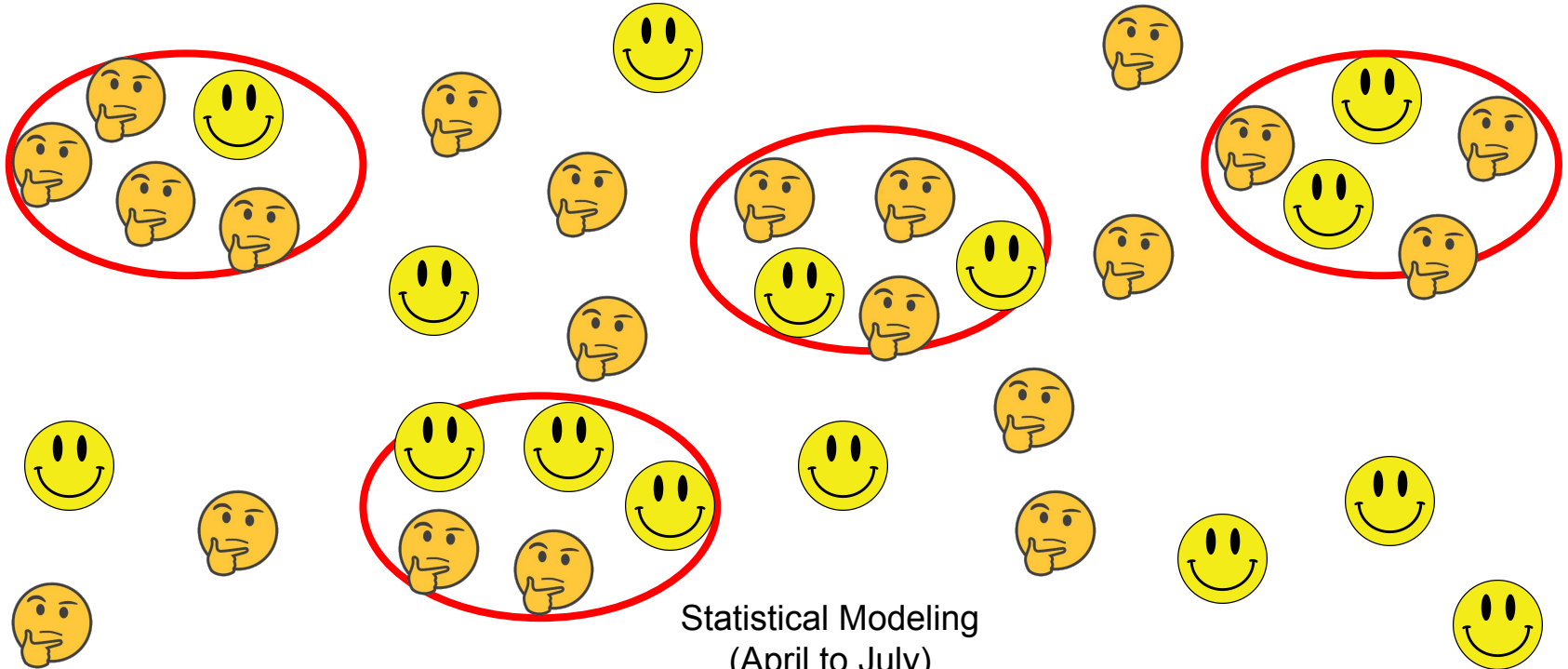
Reconfigurability of Disciplinarity

Optimists and Pessimists



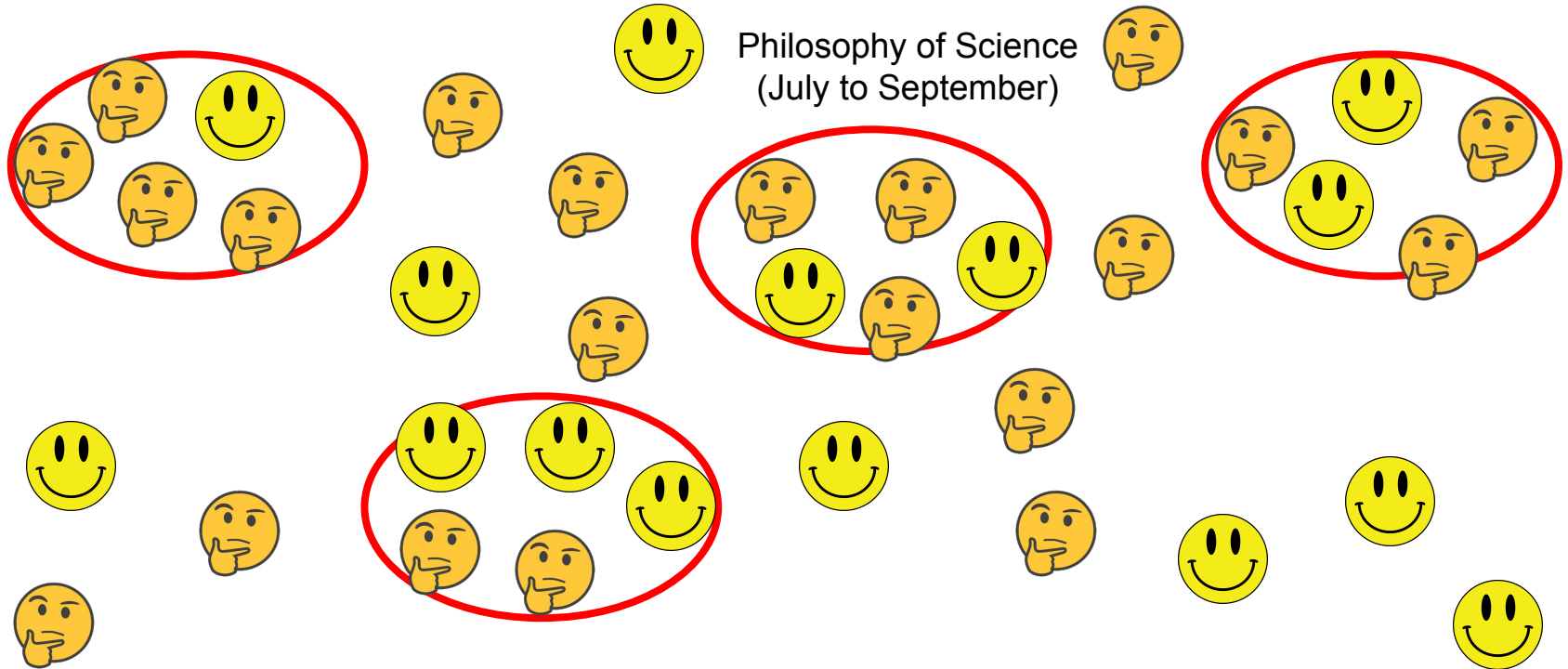
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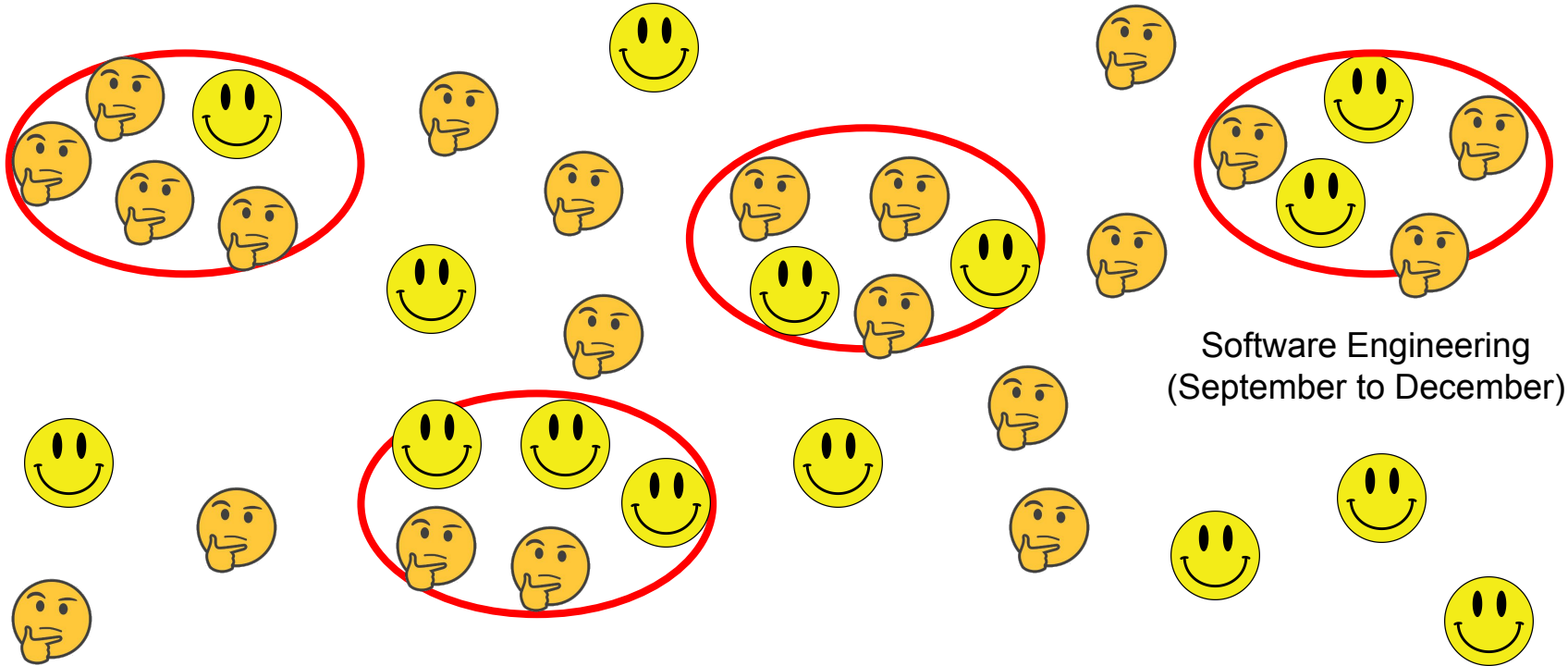
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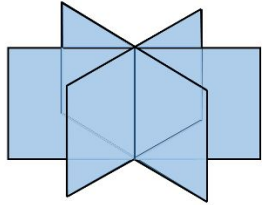
Optimists and Pessimists



Software Engineering
(September to December)

Application to an Academic Community

Orthogonal Research and Education Laboratory



Reading Queue and
Literature Review

Streamed Meetings

Research Administration

Topical Discussion
Forum

Scholar Recruitment

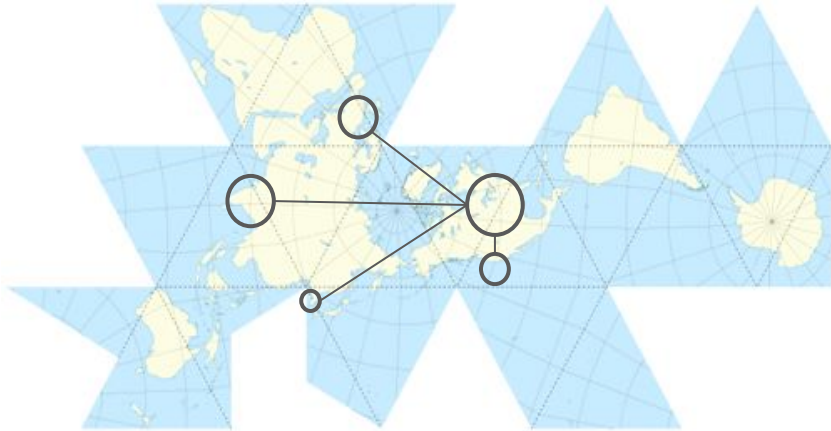
Shared Notes
from Events

Messaging Channels

Application to an Academic Community

Orthogonal Research and Education Laboratory

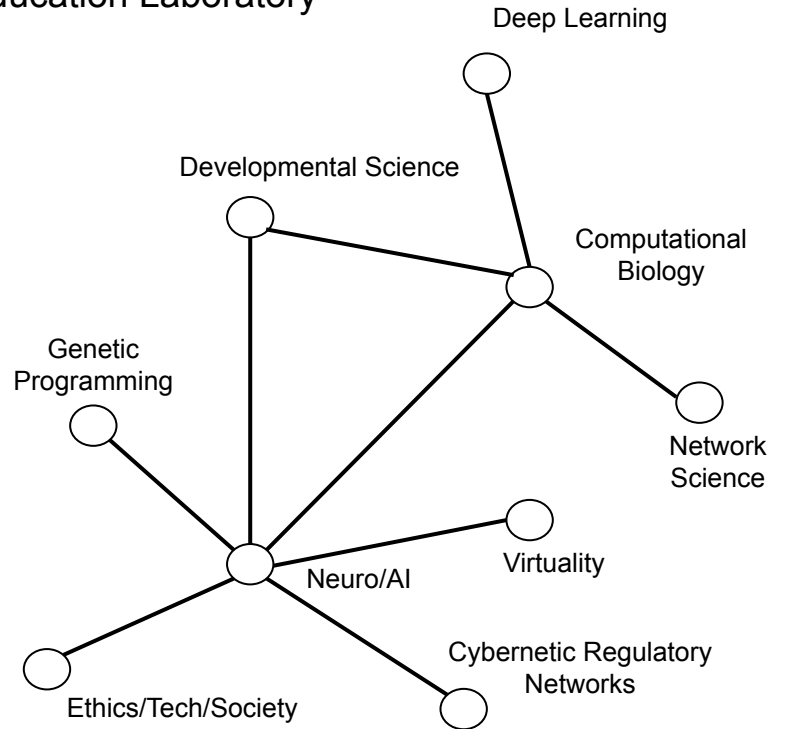
Global and Virtual Connectivity



Application to an Academic Community

Orthogonal Research and Education Laboratory

Topical Connectivity



Engagement and Design

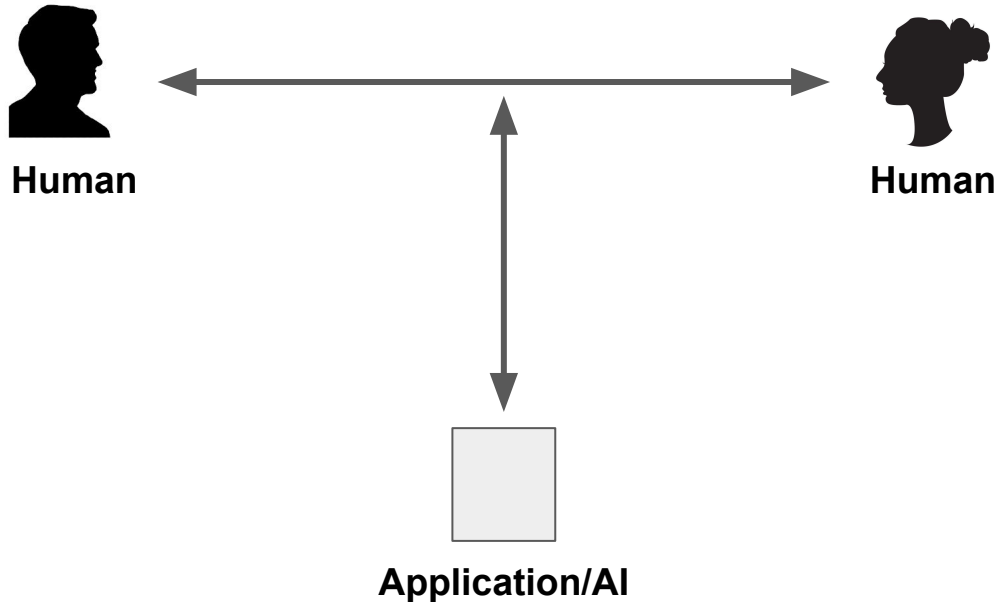
Interdisciplinary Education



Human-Human Interaction

Engagement and Design

Human-Human (Machine) Interaction



Host of usability questions surrounding these relationships:

- virtual interactions (between users and the application).
- Application will have its own form of autonomous intelligence.
- reinventing traditional academic relationships.

Open-source enables the creation of customized tools for various campus functions.

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Open-source enables freely-modifiable educational and research tools (e.g. Open Chemistry, Open Maps, Open Classroom).

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Open-source makes the digital campus less dependent on disciplinary boundaries and more resilient.

Join a Rokwire Community Community Call!

Contact Open-source Community Manager (Bradly Alicea: balicea@illinois.edu) for more information

Publication and Documentation Interest Group

Wednesday, Time TBA

Edge Computing Technology Interest Group

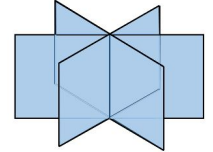
Fridays, Time TBA

Illinois App Groups Interest Group

Day TBA, Time TBA

Rokwire Community Lecture Series

1002 Siebel Center for Design and Virtual. Wednesdays, 12 Noon.



Rokwire Initiative: <https://rokwire.org/>

Siebel Center for Design: <https://designcenter.illinois.edu/>

Orthogonal Research and Education Lab: <https://orthogonal-research.weebly.com/>

Rokwire Community Lecture Series



Topics Covered:

A broad survey of topics for potential contributors to get thinking.

We will follow up on these topics in the community or in next term's series!

Campus Apps, Open-source and Communities, Survey Research, A Vision for what you can do with Mobile Devices and Networks, Data Privacy, Human-Human Interaction, and Design.

Rokwire Community Lecture Series

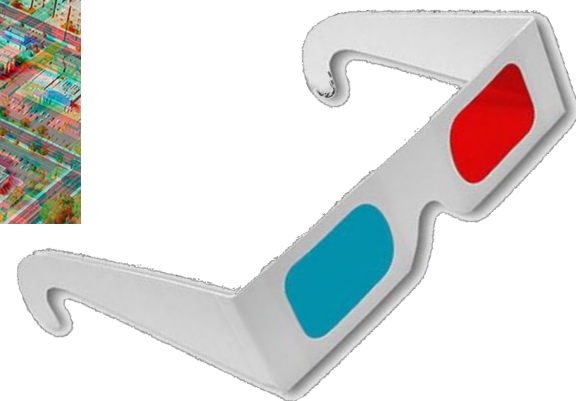


Final Session: STRAT Lab

For those interested in design, we will introduce the campus community to the STRAT Lab.

November 17: 12 Noon in **1000** SCD and virtual.

STRAT Lab: how do you use design to make a contribution to our community?



Slack: <https://launchpass.com/rokwirecommunity>

Discord: <https://launchpass.com/rokwire-community>

Onboarding Guide: <http://tiny.cc/Onboard-Guide>

Questions? Contact balicea@illinois.edu



I ROKWIRE

We need your ideas!

Enjoying the app? Missing something? Tap on the bottom to submit your idea.

[Submit Feedback](#)

Version: 2.6.21

At the bottom of the Settings page (touch the gear icon) of your Illinois and Safer Illinois App.

Be on the lookout for additional modes of public feedback soon!