

SEARCHCH

Sharing Expertise and Artifacts for Reuse
through Cybersecurity Community Hub

IEEE S&P BoF: Sharing Cybersecurity Research Artifacts To Accelerate Progress

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SEARCCH Collaborative Team



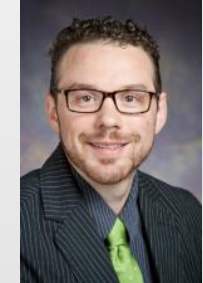
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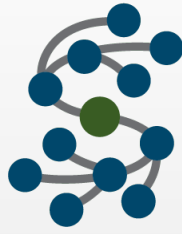


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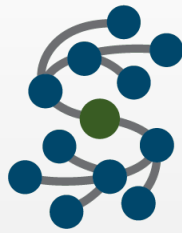


Our Community's Challenges & Needs

- Sharing of repeatable, reproducible, and reusable artifacts in cybersecurity experimentation
 - Can greatly enhance one's ability to build upon the work of others
 - Helps in comparing solutions.
- Sharing artifacts can be difficult and time-consuming
- Finding relevant experiments and artifacts can be challenging and time-consuming
- We need:
 - ✓ Broad sharing of experiment artifacts
 - ✓ Solution that facilitates rapid and open community sharing and reuse



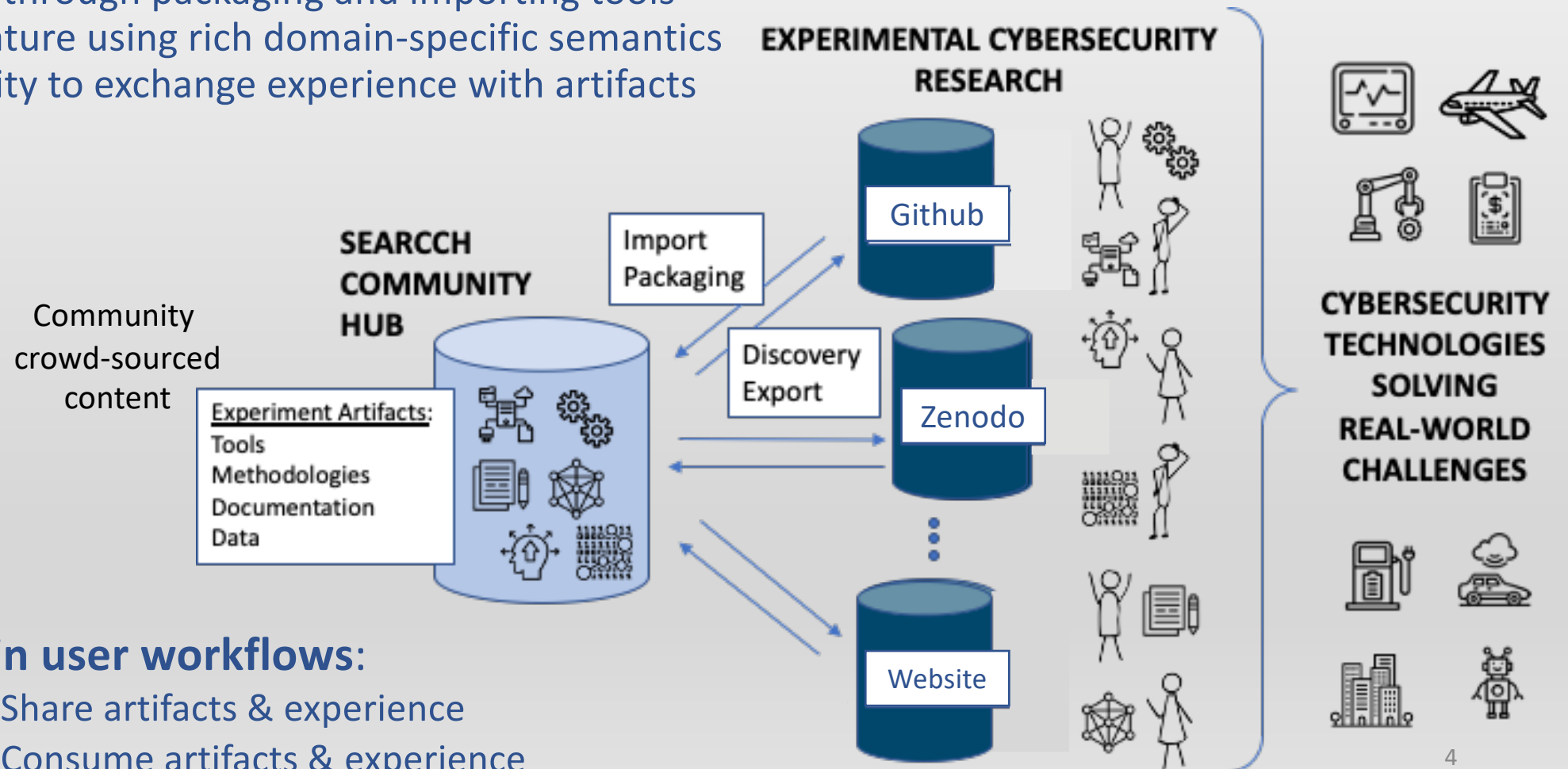
<https://www.business2community.com/leadership/8-keys-innovation-mindset-0882548>



Artifacts-sharing Hub Concept of Operations

Collaborative, community-driven platform that lowers barrier to sharing and reuse

- ✓ Assisted sharing through packaging and importing tools
- ✓ Smart search feature using rich domain-specific semantics
- ✓ Enable community to exchange experience with artifacts



- **Main user workflows:**
 - Share artifacts & experience
 - Consume artifacts & experience



Consume Artifacts & Experience Workflows

- Find artifacts potentially relevant to one's research (search mechanism)
- Initially vet artifact – is it worth pursuing?
 - Understand what artifact is about at high level (view artifact description mechanism)
 - Determine quality of artifact (rating mechanism)
 - Understand how others have used artifact and their experience with it (community discussion mechanism)
 - Understand details of artifact (view metadata mechanism)
- Bookmark artifact for later use (favorites or collection or notebook mechanism)
- Save artifact copy locally (download mechanism)
- Strawman workflow mockup demonstration
 - Finding and determining if artifact is worth pursuing to help with my research



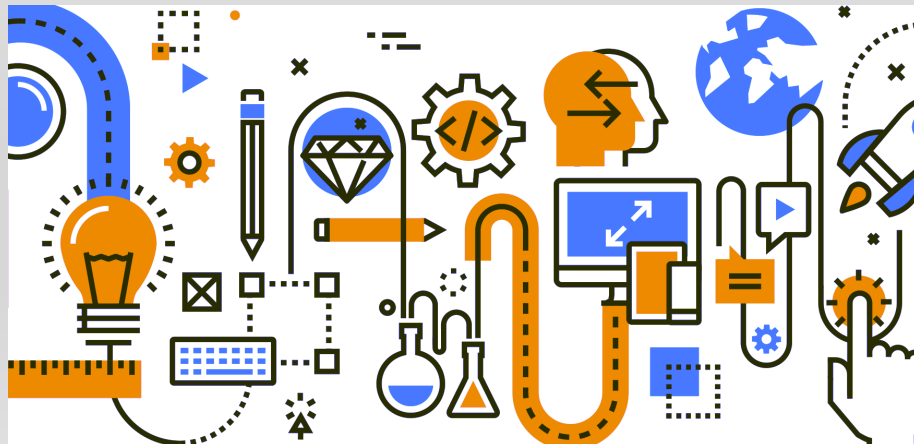
Strawman “Find & Vet” Workflow

1. Open hub (no login)
2. Enter KEYWORD in search bar
 - Results displayed: name, brief description, community rating
3. Open one result
 - View: artifact name
 - View artifact long description
 - View artifact owner/publisher
 - View artifact community rating
 - View latest 3 community comments
4. Click on artifact link to go to artifact site
 - Displays “Leaving SEARCCH Hub”
 - Loads externally hosted artifact page



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How would YOU want to interact with an artifact hub to facilitate your research?

- How do you find artifacts now, vs.
- What the ideal hub do that would make this process easier for you?
- *NOT focusing on aesthetics right now!*



SEARCHCH Ongoing Work & Next Steps

- Using YOUR inputs, actively working on (in parallel)
 - Implement base hub framework (ongoing)
 - Consume artifacts workflows
 - Provide semantically rich, knowledge-based searching
 - Curate artifact collections and seed the hub
 - Share artifacts workflows
 - Provide automated tools to assist with packaging and importing artifacts
 - Metadata extraction and insertion
 - Community consume/share experience workflows
 - Enable ratings and discussions around artifacts
- Planning future engagement events



Continue Your Involvement!

- We need YOUR input
 - Got workflows/use cases?
 - Requirements/needs
 - Other thoughts and comments?
- Got artifacts? Talk to us
- Join our future engagement events

- Follow us on Twitter: @SEARCCH_Hub
- Visit us on the web: <https://searcch.cyberexperimentation.org>
- Sign up for our mailing list for announcements
 - Send email address or post in chat

Contact Us



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