

Building Privacy-First Communication Tools: From Raspberry Pi to Production

- **Speaker:** Jim Arasim
- **Room:** CC 202
- **Time:** Sat 4:00 pm – 4:30 pm
- **Format:** Workshop/Tutorium (all-day)
- **Difficulty:** Some experience required
- **Track:** Creative
- **Additional Tags:** Live Event
- **Presenter Location:** In-person
- **Experience:** first time speaking

Description:

Privacy shouldn't require trusting someone else's promises. This session demonstrates how to build communication and media platforms where privacy is architecturally guaranteed, not policy-based.

The talk covers two production projects: **Stuffed Animal War** (ephemeral real-time chat) and **Analog Archive** (self-hosted music streaming).

Both run on everything from \$15 Raspberry Pi hardware to cloud deployments, proving that privacy-first design doesn't require expensive infrastructure.

You'll learn:

- Zero-persistence architecture patterns (no databases, no logs, no user tracking)
- WebSocket-based real-time communication with room isolation
- Deploying self-hosted services across hardware tiers
- Client-side processing to avoid server-side data collection
- Practical fallback mechanisms (auto-AP mode, graceful degradation)

Technical stack: Node.js, WebSockets, systemd services, Apache2 reverse proxy, Backblaze B2 integration

Takeaway: Working code, deployment strategies, and architectural patterns you can implement immediately. All projects are open source and production-tested. These systems have been running in production for years, serving real users who want communication tools without surveillance capitalism.

Target Audience:

- Self-hosting enthusiasts
- Privacy advocates
- Web developers interested in real-time applications
- System administrators deploying personal infrastructure
- Anyone building alternatives to commercial services

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