

# Jonathan Sumner Evans

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## 🧰 WORK EXPERIENCE

**Software Engineer, Beeper** — Automattic — Remote April 2024 - Present

- Saved ~2TB of RAM by rewriting the Telegram to **Matrix** bridge from Python to **Go**.
- Implemented the cryptographic key infrastructure necessary for message key backups and interactive device verification in mautrix-go by utilizing the standard Go **cryptography libraries**.
- Implemented media upload/download and interactive device verification in the Beeper client SDK written in **Go** which is being used in the next generation Beeper clients.

**Software Engineer** — Beeper (acquired by Automattic) — Remote July 2021 - April 2024

- Scaled our backend infrastructure from handling <1,000 users to >100,000 users by **sharding** traffic from high-volume bridges to a separate **Go** service called *Hungryserv* in a backwards-compatible, transparent manner. I created the initial proof of concept and then continued as a core member of the 3-member team that productionized the project over a four-month period.
- **Reverse-engineered** and implemented features for *Beeper Mini* (iMessage on Android) including media, tapbacks, typing indicators, read receipts, edits, unsends, link previews, and chat metadata changes.
- Measured message send **latency and reliability** by instrumenting bridge **metrics**. Built a Dockerized **Go** service to process those metrics and send them to BigQuery.
- **Reverse-engineered** the LinkedIn Messaging API and implemented a LinkedIn to Matrix bridge in **Python**.
- Designed a framework for importing users' chat history, and implemented it in the WhatsApp, Facebook, Instagram, and Telegram bridges.

**Adjunct Professor** — Colorado School of Mines — Golden, CO Aug. 2018 - Dec. 2024

- **Algorithms** (4×) — advanced data structures, graph algorithms, dynamic programming, NP-completeness
- **Principles of Programming Languages** (4×) — functional programming, parsers, language implementation
- **Computer Organization** (1×) — RISC-V assembly, processor design, memory hierarchy
- **Advanced Computer Architecture** (1×) — cache coherence, virtual memory, branch prediction

**Software Engineer** — The Trade Desk — Denver, CO June 2019 - July 2021

**Software Developer** — Can/Am Technologies, Inc. — Lakewood, CO Feb. 2013 - Aug. 2016

## 📖 EDUCATION

**Colorado School of Mines** — Golden, CO — B.S. + M.S. Computer Science July 2016 - May 2019

- Outstanding Graduating Senior for Computer Science
- Chair of Mines ACM, Service Chair of Tau Beta Pi, **Linux** Help Guru of Mines Linux Users Group (LUG)

## 👤 TALKS AND PRESENTATIONS

**Matrix Cryptographic Key Infrastructure** — Matrix Conference Sept. 2024

- Provided an overview of how key sharing, key backup, device and user verification, and secret storage operate within Matrix to provide cryptographically secure messaging features.

**Hungryserv: A Homeserver Optimized for Unfederated Use-Cases** — Berlin Matrix Summit Aug. 2022

- Discussed a Matrix-compatible homeserver that Beeper uses to handle unfederated bridge traffic.

## </> NOTABLE PROJECTS

**Nix Home Manager** (Maintainer) — github.com/nix-community/home-manager — MIT April 2021 - Present

**Sublime Music** (Author) — github.com/sublime-music/sublime-music — GPLv3 Nov. 2018 - Dec. 2024

- A native Subsonic music server client for Linux built using **GTK** and **Python**.