

STEVEN AGRI

Security · Networking · Embedded Systems & IoT

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SUMMARY

Hands-on technologist focused on security, with a strong interest in OSINT and wireless. Builds and tests real hardware: Wi-Fi auditing rigs, ESP32 firmware, sub-GHz radio tools and Home Assistant automations, all on equipment I own. Uses AI coding tools to build AI assistants, flight trackers and security tools. Brings years of fast-paced, customer-facing hospitality experience and the patience, planning and composure of full-time parenting. Seeking help desk / IT support, SOC analyst or IoT security roles.

SECURITY & EMBEDDED PROJECTS

Wi-Fi Wardriving & Packet Capture Rig (Pwnagotchi)

- Built a portable Raspberry Pi Zero W unit with an e-ink display, a USB Wi-Fi adapter in monitor mode and GPS.
- Wardrove to collect geotagged 802.11 captures (.pcap) and analyzed traffic and handshakes in Wireshark; all testing on my own networks.

DIY Flipper Zero Alternative (ESP32 + CC1101)

- Assembled an ESP32 multi-tool running Bruce and Marauder firmware to study Wi-Fi, Bluetooth LE and sub-GHz radio.
- Used the CC1101 radio to capture and replay signals from my own devices, turning it into a universal remote, then tied those devices into Home Assistant automations.

AI Voice Assistant & Home Automation

- Built a Home Assistant voice satellite on a Seeed XIAO ESP32-S3 with ESPHome and on-device wake-word detection.
- Used AI coding tools to build AI assistants, and created many Home Assistant automations using its REST API.
- Designed an ESP32 touchscreen control panel (ESPHome, ILI9xxx display, XPT2046 touch) for a smart speaker, iterating through 10 revisions.

Surveillance Detection & OSINT Tools

- Deployed and evaluated open-source BLE/Wi-Fi surveillance-detection firmware (OUI-Spy, Flock-You) on the ESP32-S3.
- Wrote a Shodan API module for an ESP32 display with a caching state machine that conserves query credits.

ESP32 Display Firmware

- Real-time ADS-B flight radar on a round GC9A01 display, fed by the OpenSky Network API (XIAO ESP32-S3).
- ESP32-C3 Wi-Fi dashboard rotating weather, markets, sports and news cards pulled from public REST APIs and RSS.

C/C++, PlatformIO, Arduino, LovyanGFX, SPI displays, LittleFS

Home Lab & Self-Hosting

- Set up a WireGuard VPN, an Unbound recursive DNS resolver, NextCloud, Docker and a LAMP stack; designed a small home/office network. Documented each build at stevenagri.com.

TECHNICAL SKILLS

Security & OSINT	Wireshark, packet capture & analysis, wireless auditing (802.11, BLE, sub-GHz), Shodan, Bruce, Marauder, Pwnagotchi
Networking	TCP/IP, DNS, VPN (WireGuard), Wi-Fi, SOHO routing & firewalls
Embedded & IoT	ESP32 (S3, C3, WROOM), Raspberry Pi, CC1101, ESPHome, Home Assistant, C/C++, PlatformIO
Systems & Tools	Linux (Arch, Ubuntu), Docker, Git/GitHub, Bash, Python, HTML/CSS/JavaScript, AI-assisted development

EXPERIENCE

Stay-at-Home Parent & Independent Study

2020 – Present

- Full-time caregiver while building the security, networking and embedded projects listed above.

Hospitality Industry

Before 2020

- Worked in fast-paced, customer-facing roles; stayed calm under pressure and worked well as part of a team.

CERTIFICATIONS

- **CompTIA Security+** — currently studying (current exam version)
- **CompTIA Network+ ce** — earned Aug 2018 (active through Aug 2021)
- **CompTIA A+ ce** — earned Jan 2018 (active through Jan 2021)