

MAXIMILIAN SANFORD BURKHARDT

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Education

- ◇ UC Berkeley College of Engineering: Bachelor of Science in Electrical Engineering & Computer Science (2013).

Areas of Expertise

- ◇ **Information Security Generalist**, with experience in diverse areas including AppSec, network security, cryptography, RF security, and malware analysis.
- ◇ **System Designer and Architect**, with background both in high-scale distributed systems (Airbnb) and traditional corporate networks (NCC Group & UC Berkeley).

Work History

- ◇ **Staff Security Engineer (L6), Airbnb** (2016–Present): Built the Security Engineering team and acted as technical lead for three security teams (Security Engineering, Data Security, and Production Security). Notable projects included:
 - Designed, built, and championed *SecureStack*, a system to build mutually authenticated TLS tunnels in Airbnb’s infrastructure by integrating with service discovery. This project introduced high-quality network segmentation to the Airbnb environment of 2,500 microservices.
 - Core designer and leader of the *Permissions Working Group*, a cross-functional team redesigning authorization systems in a high-scale, highly distributed infrastructure.
 - Served for two years as a *Sysop*. Airbnb Sysops were highly experienced engineers that were on on-call for any incident in the Airbnb platform, from DB instability to JavaScript issues.
- ◇ **Senior Security Engineer, NCC Group** (2014–2016) Performed penetration tests on products built by a wide variety of Silicon Valley companies. Testing performed covered most disciplines of information security, but had particular focus in:
 - Authentication flaws in web applications, particularly ones using federated login such as Oauth2.0 or SAML.
 - Network security & red teaming in organizations with a modern, web-focused stack.
- ◇ **Lead Information Security Engineer, UC Berkeley Student Affairs IT** (2012–2013): Handled security operations and policy for approximately 10,000 people and 14,000 machines. Led a team of five to complete a variety of security projects, including web app audits, firewall review, and IDS monitoring. Was primary system administrator for team-owned workstations & servers (Linux & FreeBSD).
- ◇ **Information Security Consultant, UC Berkeley Student Affairs IT** (2011–2012): Mitigated malware outbreaks in the 12,000 machine residential network at UC Berkeley. Reverse-engineered samples recovered to build better mitigation strategies.
- ◇ **Webmaster & Graphic Design Consultant, Praxis Works** (2010–2014): Designed and built the [Praxis website](#), as well as the graphics etched on to Praxis rings.

InfoSec Community Contributions

- ◇ Presented [Sneaking In Network Security](#), about the SecureStack project, to the 35th Chaos Communication Congress (35C3).
- ◇ Presented [Hunting the Modern Attacker](#), about AppSec incident response, to OWASP AppSec Day 2019.
- ◇ 2019 guest lecturer for 6.858, the MIT undergraduate class on computer systems security.
- ◇ Organized BERKE1337, Cal’s Cybersecurity Competition Team. Led team to 1st place in Cal’s second appearance at the Western Regional Collegiate Cyber Defense Competition, and 5th place in the team’s first Nationals appearance. Served a role as primary expert in binary analysis & Windows defense.

Certifications

- ◇ PADI Advanced Open Water Diver. Also drysuit certified.
- ◇ General-class amateur radio operator. Callsign: KK6PEK.