

THOMAS A. KILBRIDE

PGP Key Fingerprint

8CA4 8A5E 7841 FB3F FBCE
FFEC DD2F 0AD9 7068 4D2F
RSA4096 / 0x70684D2F

CONTACT

admin@obnauticus.com
github.com/obnauticus
www.obnauticus.com

EDUCATION

Purdue University, West Lafayette, IN
Studied Electrical Engineering (Minor in Economics)

EXPERIENCE

Waymo, LLC. Security Engineer Spring 2020 - Present

Core contributor on Waymo's vehicle security team. Owning hardware and System-on-Chip security architecture on future vehicle platforms. Leading the development of Waymo's root Certificate Authority. Developing proof-of-concept hardware prototypes and security tooling. Delivering security reviews, reverse engineering, and security engineering projects.

Jump Trading, LLC. Senior Security Software Engineer Fall 2019 - Spring 2020

Worked with the core Linux and quantitative trading teams at Jump Trading to secure Jump's cryptocurrency and high frequency trading infrastructure. Responsibilities include: code and architecture security reviews, endpoint agent software engineering, threat modeling, and reverse engineering.

Amazon, Inc. Security Engineer, AWS Winter 2017 - Fall 2019

Consulted with teams across Amazon AWS and Amazon Go to help improve the security posture of current and future embedded products. Responsibilities included: security architecture reviews, hardware systems integration, embedded TPM and TrustZone implementations, reverse engineering, and cryptographic protocol design.

IOActive, Inc. Embedded Security Consultant Spring 2016 - Winter 2018

Consulted with clients and vendors to help secure their products. Reverse engineered software and hardware to find new vulnerabilities in order to write Proof-of-Concept demonstrations. Focused on embedded systems in IC-Engine vehicles and OEM Engine Control Units. Refined internal research processes and led research sponsored projects to completion. Presented embedded security research at technical conferences such as RSA and Blackhat 20.

Radical Transport, LLC. Embedded Systems Engineer Fall 2015 - Spring 2016

Worked with a small team making hoverboards for Mark Cuban. Responsible for designing hardware to control a two-wheeled self-balancing scooter. Heavily involved with initial concept design, proof-of-concept demonstrations, and prototyping.

Apple, Inc. Hardware Engineering Intern Winter 2015 - Fall 2015

Analyzed the performance of prototype and production Mac systems. Researched and isolated performance bottlenecks and helped teams find architectural improvement areas in software, hardware and silicon.

SKILLS

Programming skills in Python, Java, Go, C, PHP, FPGA, Verilog/HDL, and ARM/x86 Assembly
Security Engineering experience in TrustZone, IDA Pro, Binary Ninja, Ghidra, Burp Suite, and PKI
Experience in PCB Layout, Signal Integrity, SPI, I2C, UART, USB, CAN Bus, DDR, and Computer Architecture
Circuit debugging skills with Logic Analyzers, Spectrum Analyzers, Network Analyzers, and Oscilloscopes

ACHIEVEMENTS

Quoted as an expert in the April 2018 issue of Popular Mechanics regarding the 2017 Equifax breach

Released security research on Segway Scooters—disclosure and proof-of-concept were featured by Bruce Schneier, Forbes, and Wired Magazine

Technical presenter on embedded security research at RSA and Blackhat

Founder of Toucan, a company and iOS application selected to interview for the YCombinator S14 batch

PROJECTS

Delivered Waymo's Root Certificate Authority (CA) and Signing Services

Hardware security architecture on the Amazon One payment system

Delivered results for multiple security research projects at IOActive Labs research

Co-Founder of Toucan Checkout, a mobile ordering & payment system

Co-Founder and team lead of the Purdue Formula SAE (FSAE), Purdue University's Electric Formula Racing Team

Technical Director of BoilerMake Badge Design Team