

**Core Competencies**

Reverse Engineering	Python, C/C++, Go	Network Security	Mobile Security
Machine Learning	Red team/Blue team	OSINT	Digital Surveillance
Management	Patent Writing	Public Speaking	Technical & Non-technical Writing

**SKILLS & ACTIVITIES**

**Technical Skills:** Python, C/C++, gdb, windbg, panda-re, virtualization, TCP/IP, network security, reverse engineering, security auditing, threat hunting, digital surveillance, mobile security, machine learning, supply chain security

**Languages:** English

**PROFESSIONAL EXPERIENCE**

**Treasurer, Co-Founder, Breakpointing Bad, Albuquerque, NM**

**December 2019-Present**

- Performed threat hunting using OSINT data collection, monitoring and analysis
- Performed malware triage using JADX, Ghidra, Python, Bash
- Generated reports and presented findings to technical and non-technical stakeholders
- Traveled domestically and internationally to present results

**Research Assistant, Arizona State University, Tempe, AZ**

**June 2020 – Present**

- Identified multiple vulnerabilities in Netfilter on Linux and IPFW, PF, and IPFILTER on FreeBSD that can be exploited to subvert OpenVPN, OpenConnect, and WireGuard. This work is recognized as CVE-2021-3773
- Developed techniques to measure bypass the Russian Firewall, TSPU
- Developed tools and techniques to analyze the Linux operating system using QEMU/KVM, gdb, and panda-re

**Senior Information Controls Fellow, Open Technology Fund, Ann Arbor, MI**

**November 21-22–December 23-24**

- Developed tools for real-time, automatic application threat hunting on high-speed network traffic
- Security auditing ofPC and mobile applications
- Developed web application for OSINT research, analysis, and reporting for technical and non-technical stakeholders

**Innovation Team Lead, RiskSense, Albuquerque, NM**

**August 2017 – March 2020**

- Contributed to an in-house automated exploitation tool using python, metasploit framework, impacket, nmap, bloodhound, and Koadic
- Developed and deployed machine learning algorithms for vulnerability exploitation risk classification
- Wrote patents and received patents for machine learning
- Presented research that helped secure venture capital funding
- Managed a team of security engineers on projects ranging from machine learning to security assessment into high and low likelihood of exploitation based on OSINT sources such as NVD, twitter, reddit, and bugtraq mailing list information

**LEADERSHIP EXPERIENCE**

**Director, Biology, Security, and Society Scholars Program, Arizona State University**

**September 2018 – Present**

- Perform technical and non-technical interviews for engineering and biology Bachelors and Masters students.
- Coordinate disparate projects between multiple technical teams.
- Facilitate weekly career enrichment seminars focused on research at the intersection of biology, security, and society.

**Innovation Team Lead, RiskSense**

**May 2018 - March 2020**

- Conducted technical and non-technical interviews for engineering staff.
- Coordinated weekly meetings, defined goals, timelines, identified blockers, and proposed solutions.

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**EDUCATION**

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**Ira Fulton School of Engineering, Arizona State University, Tempe, AZ** **May 2026**

Doctor of Science, Computer Science

**University of New Mexico, Albuquerque, NM**Master of Science, Computer Science **May 2017**Bachelor of Science, Computer Science **May 2015**

- Awards: Sigma Xi, Superior Undergraduate Student
- Awards: University of New Mexico Senior of the Year
- GPA: 4.00

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**Presentations**

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**TSPU: Russia's Firewall and Defending Against the Future of Digital Repression** **Defcon 33**

Benjamin Mixon-Baca

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**Publications**

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**Hidden Links: Analyzing Secret Families of VPN Apps** **July 2025**

Benjamin Mixon-Baca, Jeffrey Knockel, Jedidiah R. Crandall

FOCI 2025

**Attacking Connection Tracking Frameworks as used by Virtual Private Networks** **September 2024**

Benjamin Mixon-Baca, Jeffrey Knockel, Diwen Xue, Tarun Ayyagari, Deepak Kapur, Roya Ensafi, Jedidiah R. Crandall

PETS 2024

**TSPU: Russia's decentralized censorship system** **October 2022**

Diwen Xue, Benjamin Mixon-Baca, ValdikSS, Anna Ablove, Beau Kujath, Jedidiah R. Crandall, Roya Ensafi

IMC 2022

**Challenges and Opportunities for Practical and Effective Dynamic Information Flow Tracking** **November 2021**

Christopher Brant, Prakesh Shretha, Benjamin Mixon-Baca, Kejun Chen, Said Varlioglu, Nelly Elsayed, Tier Jin, Jedidiah

R. Crandall, Daniela Oliveira

AMC Computing Surveys

**Port Shadows via Network Alchemy (CVE-2021-3773)**

Benjamin Mixon-Baca, Jedidiah R. Crandall

**September 2021**

Self-published/Blog

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**Patents**

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Predicting and Quantifying Weaponization of Software Weaknesses (US-20240126891-A1)

**April 2024**