

BRENT ESKRIDGE | PHD

Cybersecurity · Interdisciplinary Research · Machine Learning · Computer Programming

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Summary

I **create unique solutions** to interesting and difficult technical challenges, but create even better solutions when **collaborating in a diverse team**. I have extensive experience collaborating in **interdisciplinary machine learning research projects**, implementing solutions in software, and **communicating technical concepts** to a wide variety of audiences, and **mentoring** others.

Research & investigation
Penetration testing
Source code analysis

Data analysis & visualization
Technical storytelling
Project management

Java, Python, C/C++, R, SQL
Algorithms & data structures
Mentoring & teaching

Employment Experience Highlights

Professor & Dept. Chair, Dept. of CSNE - Southern Nazarene University

2004 - Present

- Proposed, secured, and managed three **interdisciplinary research** projects that applied **machine learning** to biologically-inspired models of collective behavior. Projects had funding in excess of **\$380,000** and consisted of two **National Science Foundation (NSF)** research grants and a sabbatical at the **Max Planck Department of Collective Behaviour** in Konstanz, Germany.
- Led six research projects with responsibilities including: defining and managing scope; **identifying and assessing** potential techniques; managing and **analyzing data**; drawing insights and implications from results; **communicating findings**; and mentoring junior researchers.
- Collaborated with diverse teams of researchers to publish **17 peer-reviewed research papers** and make **25 presentations** at research conferences across North America and Europe.
- Designed, implemented, and maintained software for **eight** different research projects using concepts that included **neural networks, reinforcement learning**, fuzzy logic, autonomous agents, and multi-agent systems. Software used technologies such as **Python, Java, R, Bash scripts, Ant, YAML, and GitHub**.
- Mentored and taught students in the **Cybersecurity, Computer Science, Software Development, and Network Engineering** programs, with over **90% of graduates successfully employed** in their field.
- Designed, taught, and assessed over **20 different Computer Science courses** covering topics that included: software development, **operating system concepts**, computer architecture, **Linux**, algorithms, data structures, database systems, and ethics in technology.
- Performed manual **static and dynamic code analysis** on student code to assist in debugging and ensure requirements compliance. Languages included **Python, Java, C/C++, MIPS assembly, Bash, and SQL**.
- Led the Computer Science and Network Engineering department and its **five degree programs** for **eight years** with as many as **10 adjunct and full-time faculty** and **50 enrolled majors** in a semester.
- Elected three times to the Faculty Senate by peer faculty. Served twice on the university committee responsible for faculty rank advancement (i.e., promotion), once as co-chair with the provost. Served on other committees including: NASA Space Grant Committee (2009–Present), Technology Advisory Committee (2013–2019), and Faculty Representative to the Board of Trustees (2017–2018).

Software Consultant & Co-owner - els Solutions, LLC

2000 - 2003

- Co-architected an object-oriented Java web application running on **Linux** which interfaced with a multi-valued (non-SQL) database residing on a Unix mainframe.
- Designed, implemented and tested the application's storage subsystem using Java, JDBC, and MySQL.
- Collaborated with co-owners in making day-to-day business decisions, including **project proposal and planning, budgeting**, and customer negotiation. Led company networking and marketing efforts.

- Designed and implemented a Solaris (Unix) **network server**, with a custom message format and logging subsystem, in **C++** that communicated with programmable logic controller (PLC) machinery.
- Initiated, designed, and implemented a GUI **tool** in Perl/Tk that **simplified QA testing** of software-based device simulators. Due to its success, a second version was developed for use in subsequent projects.
- Represented the software team for six months in initial **offsite integration efforts with a subcontractor**. This included troubleshooting network communications at the **packet level**, determining **specification compliance**, and serving as the software point-of-contact for the subcontractor.
- Earned and maintained a **security clearance** (*currently inactive*).

Other Experience Highlights

- Operate a home cybersecurity learning lab using tools including: **Kali Linux**, pfSense, **FLARE VM**, REMnux, Trace Labs OSINT, **ThreatPursuit VM**, Linux Mint, CentOS, and VirtualBox.
- Completed numerous TryHackMe and RangeForce training rooms, including topics such as: VirusTotal, Splunk, Yara Rules, Suricata, Wireshark, OSINT, Active Directory, Malware Analysis, and Ghidra.
- Participating in the **Battleship Security Mentoring Program** with two mentors, a Head of Information Security and a Senior Vulnerability and Threat Engineer.
- Implemented and ran machine learning experiments on the **supercomputing cluster** at the University of Oklahoma, totaling over 415,000 core hours (**47 core years**) of processing time.
- Developed tools using **Python**, **Bash**, Perl, **R**, and **regular expressions** to automatically **parse, process, and analyze large experimental data sets**, including automatic generation of statistics and visualizations.

Education

Ph.D. Computer Science - University of Oklahoma	2009
M.S. Computer Science - University of Oklahoma	2004
B.S. Physics and Mathematics - Southern Nazarene University	1995

Relevant Certifications & Accomplishments

- eLearnSecurity Junior Penetration Tester (eJPT)
- CompTia **Security+**
- TryHackMe: **Top 0.5%** (*as of 2021.06.24*)
- RangeForce: **SOC Analyst 1 Elite**, SOC Analyst 2
- AttackIQ: Foundations of Operationalizing MITRE ATT&CK

Relevant Training

- INE: **Reverse Engineering Professional** (*July 2021*), Malware Analysis Professional (*July 2021*), Penetration Testing Student (*May 2021*)
- TCM Security: **Open-Source Intelligence Fundamentals** (*July 2021*), Practical Ethical Hacking (*June 2021*)
- Black Hills Information Security: Active Defense & Cyber Deception (*June 2021*), Getting Started in Security with BHIS and **MITRE ATT&CK** (*May 2021*)
- Active Countermeasures: Cyber Threat Hunting (*May 2021*)

Volunteer Experience

- Served as a peer reviewer for **3 research journals** and **5 research conferences** and as a grant proposal reviewer for the National Science Foundation.
- Mentored Bethany High School and Elementary robotics teams from **2015 to 2019**.
- Led ethics training for SNU NASA Space Grant Summer Research students in 2013–2018 and 2021.
- Hosted a regional site for the **International Collegiate Programming Contest** (ICPC) in collaboration with the University of Oklahoma in 2016, 2018, and 2019.