Tingzhi (Eris) He

SOFTWARE ENGINEER AND SECURITY RESEARCHER

RESEARCH

UNLOCKING THE TOOLCHAIN: REVERSE ENGINEERING FPGAS
Conducted in conjunction with Los Alamos National Laboratory
- Reversing generic FPGA bitstreams into toolchain components
- Used a combination of custom genetic algorithms and neural network modeling to determine toolchain

DECOMPOSITING IR SPECTRA WITH EVOLUTIONARY COMPUTING
- Research performed on data from the NIRSpec instrument on JWST
- Used a combination of a sparse MOEA and a differential algorithm to evolve constituents and composition of spectra

EXPERIENCE

SOFTWARE ENGINEERING INTERN
Chameleon Consulting Group / Herndon, VA / May 2024 – Aug 2024
- Designed and implemented an automation pipeline, incorporating authentication and authorization mechanisms
- Developed an automated test framework executed upon software installation
- Contributed to a project focused on writing custom ELF headers and disassembling and analyzing code
- Conducted in-depth analysis and reverse engineering of binaries across various processor architectures and hardware devices, identifying and mitigating potential security vulnerabilities

FULL-STACK DEVELOPER
Campus Web Solutions / Auburn, AL / Jan 2023 – May 2024
- Utilized the entire .NET tech stack, including .NET, C#, JavaScript, HTML, CSS, SQL, and Razor
- Developed, maintained, and debugged web apps such as AU Football Ticketing, AU Nursing, SGA Voting, etc., serving over 100,000 unique users
- Created and maintained databases for many Auburn websites including GEDI, Grad's List, Dean's List, etc.

ENGINEERING AND PROGRAMMING INSTRUCTOR
TechLX / San Francisco, CA / Aug 2019 – Aug 2021
- Developed STEM curriculums, from engineering to full stack web dev and mobile dev courses (including Swift, SwiftUI and Kotlin)
- Managed and taught aforementioned courses to middle and high schoolers in a classroom setting
- Created, managed, and updated internal learning management system for educational purposes

RESIDENTIAL NETWORK AND TECHNOLOGY ADVISOR
Georgia Tech / Atlanta, GA / Aug 2018 – May 2019
- Maintained over 99% uptime for Georgia Tech Internet
- Point of contact for all residential technology issues
- Technical support for students and faculty
- Extensive work in systems administration and IT

CONTACT

eris@eris-he.com
https://eris-he.com

ABOUT ME
I am a senior in computer science at Auburn University with a passion for programming and people.

EDUCATION

AUBURN UNIVERSITY
Computer Science, B.S.
Certification in Cyber Defense
2022 - 2024
GPA: 3.91

GEORGIA INSTITUTE OF TECHNOLOGY
Electrical Engineering, B.S.
2015 - 2019

SKILLS

Reverse Engineering
x86 / x64 / ARM64 / MIPS32
GDB / Ghidra / IDA / Radare2
Full Stack Development
C / C++ / Java / Python / Go
Docker / Terraform / Kubernetes
Networking Protocols
System Administration