

# Nicholas Long

<https://github.com/nicholas-long>

## Programming Languages

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- C and C++ - 5 years
- C# - 5 years
- Web Programming back end: C# MVC, Node.js, PHP - 4 years
- Web Programming front end: Typescript, Javascript, AngularJS, jQuery, JSON, Bootstrap - 2 years
- Bash and AWK Scripting - 2 years
- Python - 2 years
- Dockerfile - 1 year
- Scala and functional programming - 1 year
- Java - 1 year

## Programming and Cybersecurity / Reverse Engineering Skill Set

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- 5 years of experience using the Microsoft stack and 4 with web application development.
- Agile development: test development, code reviews, rapid prototyping, scrum meetings.
- Experience with Git and the branch, pull request, and code review workflow. I have used Gitlab, BitBucket, and Github
- Hobbyist experience with Docker, docker-compose, and kubernetes: building swarms of containers for personal projects
- Ongoing cybersecurity education in offensive penetration testing skill sets with a focus on web application security, Linux, and Windows Active Directory security.
- Debugging and reverse engineering x86 and x64 binaries for Windows and Linux. I have extensive hobbyist experience with crackmes.one and HackTheBox challenges involving reverse engineering with IDA Pro and Ghidra: bypassing anti-debugging Windows API calls, reverse engineering virtual-machine-based obfuscated code, unpackers, and dynamic obfuscation, and I am able to bypass ASLR to develop binary exploitation code using return-oriented programming (ROP). I am also capable of finding bugs leading to binary exploitation such as stack overflows, heap corruption, and insecure printf calls.

## Achievements

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- eJPT Certified Penetration Tester (certification ID 2798399) <https://elearnsecurity.com/verify-certificate/>
- Pro hacker rank on HackTheBox. Solved "insane" level reverse engineering and binary exploitation challenges. Completed binary exploitation track. Received badges for echoland and vmcrack challenges. <https://app.hackthebox.com/profile/459321>
- I am a contributor to the popular SecLists cybersecurity repository. I created a list of target files for local file inclusion (LFI) checks, and this list automatically updates itself from debian packages using bash scripts and github actions integrations. [SecLists/Fuzzing/LFI/LFI-etc-files-of-all-linux-packages.txt at master · danielmiessler/SecLists · GitHub](#)
- Cyber Apocalypse CTF 2021: placed 95 out of 4512 teams - solved all reversing and binary exploitation challenges including reverse engineering simulated ransomware to recover files
- Created a passive and active wifi attack script with awk and aircap-ng
- Developed a poker bot using neural networks and evolutionary algorithms.
- Reverse engineered BattlEye anti-cheat protection system and created a bypass
- Created an index of file hashes for a search engine by slowly retrieving a list of all of the repositories from GitHub's API and scanning the popular ones

## Work Experience

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### **Stay at home dad and Owner of Long Custom 3D Fabrication LLC**

**October 2018 - Present**

I was fortunate enough to be able to take time off from the workforce to help raise my two amazing children. I have had time to further my cybersecurity education with TryHackMe, HackTheBox, and Offensive Security Playgrounds. I run a side business where I create and sell custom products on Amazon, eBay, and local B2B sales, all using 3D printers. I am able to make my own 3D models with Blender or CAD modeling software and use slicer software to print them. I make items such as gardening products and generic replacement machine parts.

### **Application System Analyst - Trane, La Crosse, WI**

**July 2014 - April 2018**

My duties included development and providing support, bug fixes, and workarounds for customers. During my time on the team, I helped with the transition from a domain specific C++ solution to a .NET MVC web application. I was involved in every layer of the application's stack and got experience with numerous programming languages, libraries, and paradigms. Two times, my manager sent me to "That Conference", a Microsoft-specific development conference.

### **Software Development Intern - Trane, La Crosse, WI**

**July 2013 - June 2014**

My duties consisted of development, support issues, maintenance, and assisting with data fixes. I created specialized software to automate several database related tasks, and I worked on projects to improve or replace several in-house software solutions. This internship had a strong focus on .NET development, both Visual Basic and C#, and writing complex SQL queries.

### **Part-time Master Control Operator - Fox 25/48 (WLAX/WEUX), La Crosse, WI**

**October 2010 – September 2011**

Responsible for preparing content, airing content, and FCC record-keeping requirements.

### **Part-time Temporary Employment - Kelly Services, La Crosse, WI**

**January 2006 – June 2007**

I worked in computer-related jobs including data entry, layout and design, and video editing.

## Foreign Languages

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- German (fluent from university minor and living abroad for two years)
- Spanish (reading/writing, basic conversational skills)

## Education

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### **University of Wisconsin – La Crosse**

- <https://www.uwlax.edu/>
- Graduated December 2014 with Honors
- Computer Science Major with a German Minor
- Dean's list (College of Science & Health) Fall 2010, Spring 2011, Spring 2012, Spring 2013
- GPA: 3.74
- Courses completed involving: Artificial Intelligence, Robotics, Software engineering, MVC web development, German Language
- Awarded National Science Foundation S-STEM Scholarship for 2011/2012

### **International University in Germany**

- Private University, now closed
- <https://web.archive.org/web/20220701043725/http://i-u.de/>
- Studied International Communications Management for two years until school closed
- No degree received
- Courses completed involving: Marketing and Advertising, Public Relations, MS Access, SQL and relational database design, Business - Process Management, German Language

**Onalaska High School 2001-2005**

- Diploma earned May 2005
- GPA: 3.4
- Honor Level Classes
- 4 Years of Computer Science classes
- Completed 5th year of Spanish
- Volunteered in IT department (installing, configuring, and troubleshooting new hardware and software))
- Computer Science Java Advanced Placement Test maximum score of 5
- ACT score of 30
- National Merit Scholarship Commendation 2004