

# JOSEPH MAURER

UNITED STATES CITIZEN

505.203.2611  
jmaurer@nmt.edu  
28 Ladera Rd. Belen, NM 87002

## OBJECTIVE

I am a Cyber Corp (Scholarship for Service) student at New Mexico Tech seeking a position with a government agency or national laboratory in the areas of Computer Science and Information Assurance. My interests include network security, vulnerability analysis, and databases. I am also interested in reverse engineering, remote computer exploitation, and offensive computing.

## SECURITY CLEARANCE

DOE "L" Clearance

## EDUCATION

*New Mexico Institute of Mining & Technology* August 2010 – Present

**M.S. in Computer Science**

Expected Graduation: May 2011

*New Mexico Institute of Mining & Technology* August 2006 – May 2010

**B.S. in Computer Science**

GPA: 3.37 / 4.0 (Honors)

*The University of New Mexico*

GPA: 4.0 / 4.0 (Honors)

January 2003 – December 2006

Concurrent High School Enrollment

*Central New Mexico*

GPA: 4.0 / 4.0 (Honors)

August 2005 – August 2006

Concurrent High School Enrollment

## RELEVANT COURSEWORK

- Databases
- Network Forensics
- Cryptography and Applications
- Data and Computer Communication
- Computer Architecture
- Formal Languages and Automata
- Practicum in Python
- Principles of Operating Systems
- Data Management
- Access Controls & System Security
- Information Protection and Security
- Compiler Writing
- Design and Analysis of Algorithms
- Systems Programming
- Software Engineering
- Practicum in Java
- Wireless Networks

## SKILLS

- Programming Languages: C, C++, C#, Java, Python, Ruby, x86
- Software: Visual Studios, IDA Pro, Oracle/SQL  
Microsoft Office Suite, Visio, NS-2

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## PROJECTS

**Course:** Software Engineering

**Project Name:** Secure Optimized File Transfer (SOFT)

**Project Description:** Using C#, implemented a fully functional client and server. Secure client/server authentication used the RSA algorithm for AES session key exchange. Session used AES algorithm for improved computational efficiency over RSA for secure file transfers. The LZMA compression algorithm was used to utilize network resources in an efficient manner.

**Course:** Systems Programming

**Project Name:** Server/Client Network-Based Application

**Project Description:** Using the C and the Windows API, implemented a multi-threaded, socket-based server to respond to and handle multiple clients and their requests over HTTP.

**Course:** Cryptography and Applications

**Project Name:** Logical Volume Encryption

**Project Description:** Using C#, implemented a logical volume, which included a fully functioning file system. A SHA-256 hash of the user password was an index into the volume to locate the file table. The AES algorithm was used to secure the volume's contents.

**Course:** Compiler Writing

**Project Name:** C89 Compiler

**Project Description:** Using C++, implemented a compiler for a subset of the C89 programming language. This involved projects in semantic analysis, code generation, as well as multiple stages of optimization.

**Course:** Network Forensics

**Project Name:** Extensible File Carving in TCP/IP

**Project Description:** Using C#, implemented TCP/IP session reconstruction and performed file carving to detect JPEG images. This project further focused on the simple integration of external image processing filters to allow for nonintrusive network monitoring.

## AWARDS

- Scholarship for Service August 2009 – May 2011  
*National Science Foundation,  
Department of Homeland Security*
- Lottery Success Scholarship August 2006 – May 2010  
*New Mexico Institute of Mining and Technology*
- Copper Scholarship August 2006 – May 2010

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**WORK EXPERIENCE**

*Sandia National Laboratories (NM)*

May 2010 – Present

Graduate Professional Technical Intern

Center for Cyber Defenders, org. 5641

- Designed, implemented, and analyzed a novel network collaboration protocol
- Android OS Capability Extension and Analysis

*New Mexico Institute of Mining & Technology*

Undergraduate Teaching Assistant

Department of Computer Science & Engineering

Principles of Programming Languages

January 2010 – May 2010

- Designed programming language evaluation projects
- Tutored students
- Graded assignments, projects, and exams

Data and Computer Communication

August 2009 – December 2009

- Designed network infrastructure emulation projects
- Taught labs and tutored students
- Graded assignments, projects, and exams

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## REFERENCES

*Lorie M. Liebrock, Ph.D.*

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Chair, Department of Computer Science and Engineering  
New Mexico Institute of Mining & Technology  
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