

**Formal  
Education**

UNIVERSITY OF CALIFORNIA, DAVIS

*PhD in Computer Science (2002 – Present)*

Advanced to candidacy: September 2006. Expected degree completion: December 2007. Specialization: Computer security. Minor emphasis: Information visualization. GPA: 3.74. Advisor: Dr. Matt Bishop.

UNIVERSITY OF NEBRASKA AT OMAHA

*Bachelor of Science in Computer Science (1998 – 2002)*

Graduated: May 2002 summa cum laude. GPA: 3.87. Major: Computer science. Minor: Mathematics.

**Honors &  
Awards**

CREATIVE WINNER

*IEEE InfoVis Visualization Contest (2006)*

Awarded for contest entry titled "Cenimation – Visualization for Constrained Displays" for visualization of U.S. Census data.

GRADUATE ASSISTANCE IN AREAS OF NATIONAL NEED FELLOWSHIP

*University of California, Davis (2002 – 2003)*

Provided funding for first year of graduate study in computer science.

OUTSTANDING UNDERGRADUATE STUDENT

*College of IS&T, University of Nebraska at Omaha (2001-2002)*

Awarded for impressive academic record and personal achievement at the College of Information Science and Technology.

CERTIFICATE OF EXCELLENCE

*Lockheed Martin Mission Systems (2002)*

Awarded for performance and contribution on the CESAR program.

CERTIFICATE OF APPRECIATION

*Ameritrade (2000)*

Awarded for outstanding performance and dedication as an ATG intern.

SPECIAL RECOGNITION (PLAQUE)

*Nebraska State Board of Agriculture (2000)*

Awarded for diligent work on inaugural NE State Fair Technology Center.

## Papers and Talks

"THE SOFTWARE ASSURANCE CBK AND UNIVERSITY CURRICULA"  
Bishop, Matt and Sophie Engle, *Proceedings from the Tenth Colloquium on Information Systems Security Education*, p14-21, June 2006.

### "ARP SPOOFING"

Engle, Sophie and Sean Whalen, *InfoTec Conference*, April 2002.  
Also presented and demonstrated privately to industry leaders from the NSA, FBI, and Mutual of Omaha.

## Research Projects

### VULNERABILITY ANALYSIS

*UC Davis Security Lab* (2004 – Present)

Focuses on providing a formal vulnerability model and classification framework to further our understanding of both known and unknown vulnerabilities.

### CENIMATION –VISUALIZATION FOR CONSTRAINED DISPLAYS

*UC Davis Visualization Lab* (Fall 2006)

Worked with J. Shearer, M. Ogawa, S. Haroz, and Professor Ma to develop a tool for visualization of multidimensional U.S. Census data. Awarded certificate as "Creative Winner" from the *IEEE InfoVis 2006* Visualization Contest. More on project website at [jshearer.googlepages.com/cenimation](http://jshearer.googlepages.com/cenimation).

### SECURE SOFTWARE ASSURANCE COMMON BODY OF KNOWLEDGE

*UC Davis Security Lab* (Spring 2006)

Worked with Professor Bishop to analyze the SwACBK's application to programs for advanced undergraduate and graduate education, and offer suggestions for strengthening it. Resulted in paper publication and workshop (see publications).

## Academic Experience

### UCD RESEARCH ASSISTANT

*Vulnerability Analysis Project* (2004 – Present)

Assist Professor Bishop with research on the analysis of vulnerabilities.

### UCD TEACHER ASSISTANT

*ECS20: Discrete Mathematics* (Spring 2007)

Working under John Steinberger. Responsible for holding weekly discussion sessions, weekly office hours, answering homework questions, and grading weekly homework (in progress).

## Academic Experience

### UCD TEACHER ASSISTANT

*ECS150: Operating Systems (Winter 2004)*

Worked under Professor Levitt. Responsible for holding bi-weekly discussion sections (for two sections of the course), weekly office hours, answering questions on homework or lecture topics, holding interactive grading of programming projects, and helping with midterm and final exam grading. Received a median average score of 9.08 out of 10 from 38 evaluation surveys.

### UCD TEACHER ASSISTANT

*ECS120: Operating Systems (Fall 2003)*

Worked under Professor Wu with another TA. Alternated all duties with other TA to accommodate work load for two sections of the course. Duties included holding discussion sections every other week, holding office hours, assisting with questions, and alternating homework grading. Received a median average score of 9.42 out of 10 from 43 evaluation surveys.

### UNO STUDENT INSTRUCTOR

*CIST1400: Introduction to Computer Programming (Spring 2002)*

Worked under guidance of lead instructor Mr. Fulkerson. Responsibilities included preparing and giving lectures, administering quizzes and exams, providing homework assistance, grading coursework, dealing directly with any student issues, and maintaining office hours.

### UNO TEACHER ASSISTANT

*CSCI3550: Communication Networks (Spring 2001, Fall 2001)*

Worked under Professor Dick. Main contact for questions, comments, concerns, and grading for the online section of the course.

## Industry Experience

### SANDIA NATIONAL LABORATORIES

*Livermore, California*

*Information Security Intern*

*Summer 2006*

Part of the Center for Cyber Defenders (CCD) team. Worked on an interactive training tool in Java to analyze images for embedded steganographic messages.

### LOCKHEED MARTIN MISSION SYSTEMS

*Bellevue, Nebraska*

*Information Assurance Intern*

*Summer 2002*

Part of the Computing Environment STRATCOM architecture (CESAR) team at the United States Strategic Command (USSTRATCOM). Traveled to the Sandia Symposium to present obstacles to secure collaboration for sensitive information. Obtained a full Department of Defense Secret clearance for duration of internship. Awarded CESAR's Certificate of Excellence for performance and contribution on the CESAR program.

## Industry Experience

ORILLION USA, INCORPORATED

*Tulsa, Oklahoma*

*Systems Engineering Intern*

*Summer 2001*

Helped with new release testing and product design for OVantage – a network inventory management system designed to organize and track carrier inventory, capacity, routing and quality of service for telecommunications networks with automated information collection for physical and logical network entities. Built Microsoft Excel tools to assist bulk data entry into OVantage database, as well as database extraction scripts. Wrote and maintained user documentation for OVantage Constraint Engine. Became the main customer contact for OVantage Constraint Engine.

AMERITRADE HOLDING CORPORATION

*Omaha, Nebraska*

*Technology Intern*

*May 2000 – Nov 2000*

Worked with the Data Network Services department in the Ameritrade Technology Group (ATG). Team lead for Asset Management project. Assisted with data network services inventory management. Created and maintained network documentation, performed onsite equipment installation, and handled port activation requests and switch configuration. Awarded "Certificate of Appreciation" for outstanding performance and dedication as an ATG intern.

FIRST TECHNOLOGY SOLUTIONS

*Omaha, Nebraska*

*Network Analyst Intern*

*Jan 2000 – Apr 2000*

Responsible for daily backup status reports and workstation installation and configuration. Assisted with network helpdesk.

## Service Experience

SCOTT SCHOLAR FOCUS GROUP

*President (2001 – 2002), Vice President (2000 – 2001)*

Represents recipients of the Walter Scott, Jr. Scholarship. Created to provide and promote activities for academic enrichment, community service, industry exposure, and student interaction.

NEBRASKA STATE FAIR TECHNOLOGY CENTER

*Nebraska State Fair (2000 – 2001)*

Created to educate Nebraskans about various topics in technology, from the most basic concepts to highly technical issues. Also included sections on privacy and information security. Run by dedicated students from the University of Nebraska's Peter Kiewit Institute. Received special recognition from the Nebraska State Board of Agriculture for the diligent work on the inaugural Technology Center (2000).

## References

Available on request.