

Curriculum Vitae

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Summary

My experience in digital forensics began during my previous law enforcement career as a computer forensics examiner in 2004 for the City of Renton Police Department, where I had been a commissioned officer since 1994. My duties included assisting in the high tech investigation of felony crimes to include Possession of Child Pornography, Identity Theft, and other felony crimes. I also assisted the Internet Crimes Against Children (ICAC) Task Force as a department agency member.

Subsequently, in the private sector, I was employed by New Technology Incorporated (NTI) as a Managing Principal, supervising two offices and junior forensic examiners. Currently, I am a private consultant advising clients in electronic discovery matters as well as conducting digital forensics examinations. I have been retained in civil matters to include internal corporate matters, class action litigation, divorce, and wrongful termination cases. I have served as the President and Secretary of the Computer Technology Investigators Network, a non-profit, High Tech Crime Training Association established in 1996.

I am an instructor for the University of Washington's Digital Forensics Program as well as being a member of the University of Washington's Electronic Discovery Advisory Board, the Digital Forensics Advisory Board, and the Intelligence Advisory Board. I have assisted in the continued development of the Digital Forensics Program and have also assisted as an original member of both the Electronic Discovery Certificate Program and Intelligence Certificate Program at the University of Washington.

My formal digital forensics, investigative, and law enforcement training includes over 2,000 hours in basic and advanced training. Over 1,000 of those hours are specific to digital forensics with over 1,000 additional hours specific to investigations, legal processes and procedures, report writing and testimony, and law enforcement tactics. I have presented and instructed hundreds of hours of training to law enforcement members during my tenure as a commissioned officer. I have provided instruction in criminal investigative techniques to special agents of the Drug Enforcement Administration, Bureau of Alcohol Tobacco and Firearms, Immigration and Customs Enforcement, as well as several hundred commissioned officers of the Washington State Patrol, and over two dozen county and city law enforcement agencies as listed in this CV. Additionally, a listing of the formal classroom training I have attended related to digital forensics follows below, although it does not list any courses that were attended through audits, informal training given by other digital forensics experts, collective knowledge gained from sharing of information within the digital forensic community, nor training that was attended, but not formally documented.

Formal Training Received

Department of the Treasury, Federal Law Enforcement Training Center (480 hours)

Instruction from the Internal Revenue Service, Immigrations and Customs Enforcement, US Secret Service.

Pre-Computer Evidence Recovery Training, 2005

Topics: Basic computer operation; building a computer, installing applications and operating systems, computer troubleshooting and repair.

Basic Computer Evidence Recovery Training, 2005

Topics: Computer forensics analysis procedures and processes utilizing : "Forensic Tool Kit", "Encase", "DataLifter", "X-Ways Forensics", "DTSearch", "ISO Buster", "VMware", and multiple other forensic tool sets. Identification, collection, and preservation of electronic evidence. Report writing, validation of finding; keyword searching; Boolean searching; recovery of deleted files.

Advanced Computer Evidence Recovery Training, 2005

Topics: Network forensic analysis on various operating systems, to include Windows, Linux, Sun, and Solaris; Use of forensic applications in network forensic analysis; Collection of targeted files/folders; introduction to computer network configurations.

FBI, Regional Computer Forensics Lab (8 hours)

Instruction from agents and members of the Federal Bureau of Investigation

SCAN Training, 2005

Topic: Installation and use of the "Image SCAN" forensic software application, related to the identification, seizure, and investigation of digital images (photos) in child pornography investigations.

National White Collar Crime Center (8 hours)

Instruction from Prosecutors of King County, Washington and several law enforcement investigators

Electronic Law Enforcement Seminar, 2006

Topics: Identity theft investigations, forensic analysis related to forgeries and identity theft.

BitSecForensics (16 hours)

Instruction from a former law enforcement investigator

Live Data Acquisition and Analysis (2009)

Topics: Recognize, properly seize and analyze the contents of physical memory (RAM) and also volatile system data using both open source and commercially available tools such as Helix, MDD, WinEn, DD, Memoryze, Volatility, F-Response, HB Gary Responder, EnCase, and others.

X-Ways (32 hours)

Instruction from the original developer of the applications of X-Ways.

X-Ways Forensics, 2005

Topic: Installation and use of X-Ways Forensics, Replica, and Evidor forensic applications.

File Systems Revealed, 2005

Topics: Detailed instruction in various operating system file systems to include FAT, NTFS, ext2/ext, and HFS utilizing the hex editing function of WinHex and X-Ways Forensics.

New Technology Incorporated (40 hours)

Instruction from the original developers of the NTI Forensic Suite, (former IRS agents)

Forensics Training Course, 2004

Topics: Advanced computer forensics analysis techniques including the seizure (imaging of media) and analysis utilizing command line based forensic applications.

Accessdata (96 hours)

Instruction from former and current law enforcement investigators

Internet Forensics, 2005

Topics: Internet browser analysis and chat remnant analysis utilizing Forensic Tool Kit. Registry analysis of internet artifacts; recovery of deleted internet artifacts; reconstructing webpages and chat logs.

Accessdata Bootcamp Intermediate, 2005

Accessdata Bootcamp Intermediate, 2005

Accessdata Bootcamp Intermediate, 2006

Topics: Computer forensic analysis utilizing the Forensic Tool Kit and FTK Imager; creating forensic images of electronic media; analysis in the area of the registry, user files, link files, MRU files; recovery of deleted files; searching through use of keyword lists and Boolean searches; report generation; child pornography analysis and searching; hash comparisons.

Mares and Company (40 hours)

Instruction from the original software developer (former IRS investigator)

Maresware Course, 2005

Topic: Installation, use and forensic analysis utilizing the command line applications “Maresware”. Imaging electronic media, recovery of deleted files, analysis of logs and user files; hash generations and comparisons.

Core Digital Forensics (16 hours)

Instruction from the original software developer (current law enforcement investigator)

DataLifter Advanced Data Recovery Training, 2006

Topics: Installation and use of the forensic applications of “Datalifter”. Decoding link files, analysis of the Recycle Bin, decoding internet history files, recovery of deleted files, webmail recovery.

High Tech Crime Institute (16 hours)

Instruction from a current law enforcement investigator

High Tech Forensics Investigator’s Course Level II, 2004

Topics: Forensic analysis utilizing “Forensic Tool Kit” and other forensic applications; report writing; deleted file recovery; internet analysis.

Highline Community College (200 hours)

Instruction from the Division Chair, Pure & Applied Science, Highline Community College (MIT Graduate)

Managing a Computer Forensics Investigation, 2004

Topic: Managing aspects of a forensic investigation to include personnel, equipment, and case management.

Technical Aspects of a Computer Forensics Investigations, 2004

Topic: Computer forensic analysis utilizing forensic applications such as “Forensic Tool Kit” and “Encase”; recovery of deleted files; analysis of the registry, internet history, user created files, link files, MRU files; creation of forensic images from electronic media.

A+ PC Service Technician, 2004

Topic: Basic building, troubleshooting, and repair of computer systems.

Properly Securing Electronic Evidence at an Incident Scene, 2004

Topic: Identifying, preserving, and collecting electronic evidence.

Midwest Counterdrug Training Center (32 hours)

Instruction from former IRS investigators

Seized Computer Evidence Recovery, 2005

Topic: Installation and use of the forensic application "ILook"; Forensic analysis of the Recycle Bin, deleted files, registry, user created files; link files; creation of forensic images from electronic media; keyword searching; Boolean searches.

iSafe (4 hours)

Self-paced course

Professional Development Training, 2005

Topic: Instructor certification in teaching internet safety in relation to teen computer use.

SecureWorldExpo (over 60 hours)

Bellevue, Washington 2009

Bellevue, Washington 2008

Bellevue, Washington 2007

Topics: Computer security topics, electronic discovery issues, cloud computing and security; Keynote speakers included Washington State Attorney General Rob McKenna.

SiQuest (24 hours)

Instruction from the software developer (and former law enforcement investigator)

CacheBack2 Internet Forensics, 2010

Topics: Using "CacheBack", rebuilding webpages, understanding time zone variations with internet files; validating internet history files through offsets and headers; creating and understanding webpages with html and css code; report generation.

Computer Technology Investigators Network (over 100 hours)

Instruction from members of the FBI and other law enforcement agencies and experts from companies such as Microsoft and the Boeing Company.

Windows Forensics Environment, 2009

Imaging Vista Shadow Copies, 2009

MAC Forensics, 2008

Live Forensics, 2008

ProDiscover Forensics, 2008

The Real World Forensics, 2007

Bridging the Gap Between Electronic Discovery and Computer Forensics, 2007

Monthly, Quarterly, and Annual Training Attendance since 2004

I have presented on numerous occasions to various audiences on the topic of digital forensics and electronic discovery. Attendees in the various presentations I have given include members of law enforcement (Federal, State, and Local Law Enforcement), attorneys, graduate level professors and students, and private sector computer forensics examiners. In addition to regularly teaching at the Digital Forensics Certificate Program at the University of Washington (Seattle), I have also given the following presentations:

University of Washington (as a Guest Speaker, Tacoma UW Branch)

Creating and Accessing Forensic Images, 2008

Computer Forensics Software Applications and Hardware Tools, 2008

Designing and Implementing a Digital Forensics Lab, 2009

Systematic Approaches to Digital Forensics Engineering Conference, 2007

Computer Forensics Workshop

Highline Community College

Virtual Forensics Methods and Introduction, 2008

Vista Forensics, 2007

Computer Technology Investigators Network

Anti-Forensics (*at Columbia Bank*), 2008

Data Collection and Imaging Procedures (*at Bellevue Police Department*), 2007

Internet and Chat Forensics (*at Redmond Police Department*), 2008

X-Ways Replica, (*at the Washington State Criminal Justice Training Commission*) 2007

Helix Forensics, (*at the Washington State Criminal Justice Training Commission*) 2007

Peer to Peer Network Forensics, (*at the Washington State Criminal Justice Training Commission*) 2007

VMWare Forensics, (*at the Washington State Criminal Justice Training Commission*) 2007

Internet Artifacts, (*at the Washington State Criminal Justice Training Commission*) 2007

Electronic Discovery & Computer Forensics, 2008

X-Ways Forensics, (*at the City of Seattle*) 2005

Creating and Accessing Forensic Images, (*at the Washington State Criminal Justice Training Commission*) 2006

Net Threat Analyzer, (*at the Washington State Criminal Justice Training Commission*) 2005

Washington State Crime Prevention Association Conference

Online Fraud and Safety, 2005

Washington State Department of Corrections, Renton Washington

Management of Sex Offender's Use of Computers, 2005

National Business Institute, Portland, Oregon (CLE credit)

Forensics Under the New Federal Rules, 2006

Washington State Bar Association, Seattle Washington (CLE credit)

Computer Forensics and eDiscovery Introduction, 2008

Puget Sound Violent Crimes Investigators Conference

Internet Investigations and Data Mining, (*at the Washington State Criminal Justice Training Commission*) 2008

Washington State Criminal Justice Training Commission, Seattle Washington

Advanced Internet Investigations, 2009

Fighting Crime in the Virtual World, 2010 (King County VAWA Stop Grant)

I have been interviewed, quoted, or have had written materials referenced regarding electronic discovery and forensic issues by;

Referenced by the Kentucky State Bar Association

Bench and Bar, “*Peer to Peer File Sharing Applications*”, 2008

Referenced by author Harlan Carvey regarding Virtual Forensics

“*Windows Forensics Analysis DVD Toolkit, 2nd Edition*”, 2009

Acknowledged in the textbook by the authors in support of their textbook

“*Guide to Computer Forensics and Investigations, Third Edition*”, 2009

Referenced in the textbook by authors regarding research into Virtual Forensics

“*Guide to Computer Forensics and Investigations, Fourth Edition*”, 2009

Referenced by Derek Bem, Professor, University of Western Sydney

“*Analysis of USB Flash Drives in Virtual Environments*”

Interviewed by Computer Weekly

“*Surviving eDiscovery*”, Sept 2007

Interviewed by Search Storage.com

“*Data Destruction: When Should Data Disappear*”, Aug 2007

Interviewed by CIO IT Strategies for Managers

“*Do VMWare Certifications Offer a Competitive Weapon*”, 2008

Interviewed for press releases on VMWare Version 6 Software

“*VMware Workstation 6 foreshadows future VMware ESX releases*”

In addition to being quoted or referenced in articles and textbooks, I have also published (online) several topics of forensic interest or have had written topics which were published in manuals as part of a training program. Some of these are listed as follows:

Lohman Bookstore

“*Document Retention and Destruction: A Reference Manual*”, 2008

Forensic Focus (www.forensicfocus.com)

“*vmware as a forensic tool*”, 2006

“*Virtual Forensics: A Discussion of Virtual Machines as it Relates to Forensics*”, 2008

“*Windows Forensic Environment*”, 2010

The Educator, Washington State Narcotics Investigators Association

“*It’s Not About the Money, It’s About the Money*”, 2007

“*Hey Bud, What’s Up*”, 2005

“*Mommy, Where do Informants Come From?*”, 2004

I currently belong or have belonged in the past to several organizations related to electronic investigations and forensics. These are listed as follows:

Member, University of Washington Digital Forensics Certificate Program Committee

Member, University of Washington Electronic Discovery Management Certificate Program Committee

Member, University of Washington Intelligence Certificate Program Committee

Computer Technology Investigators Network (President, Secretary, Honorary Life Member)

High Tech Crime Consortium

The Agora

Numerous online computer forensics discussion groups

Current and past certifications include;

Accessdata Certified Examiner (ACE)
CacheBack Certified Examiner
Certified High Technology Crime Investigator (Basic)
Certified High Technology Crime Investigator (Intermediate)
X-Ways Forensics Certified USA User
Oregon State University Professional Development Certificate, Computer Forensics
iSafe Certified
Peace Officer Certification, Washington State Criminal Justice Training Commission

My educational background includes;

AAS Degree, Bellevue Community College, 1994
Basic Law Enforcement Academy, Washington State Criminal Justice Training Commission, 1994
Corrections Officer Academy, Washington State Criminal Justice Training Commission, 1992

Matters in which I have testified or provided opinions or testimony as an expert or appointed as Special Master during the last four years include;

La Plata County Court, Colorado

Testified and qualified as a Computer Forensic Expert, with opinion given on “Secure Deletion/Data Wiping” Programs, in a civil litigation matter- *Mynydd Stud Hir, LLC, et al. v. Rawls, La Plata County Court (Colorado) Case No. 05 C 1064.*

King County Superior Court

Appointed as a Special Master in a civil litigation matter – *Contemporary Services Corporation v Grant Haskell, No. 06-2-32584-2 SEA*

Deposed as an expert and Special Master in this matter

King County Superior Court

Appointed as a Special Master in a civil matter – *VanSickle v VanSickle, King County Cause No 08-3-06079-2 SEA*

United States District Court, Southern District of Ohio, Eastern Divison

Retained as an Independent Expert in a civil matter – *Zep Inc v Kimball Motor Supply*

Groups, agencies, and associations that have attended presentations I have conducted in the area of digital forensics, internet investigations, and online social networking investigations include;

Government Agencies

Bellevue Police Department
Chehalis Tribal Corrections
Chelan County Sheriff's Office
City of Seattle
Customs and Border Protection
Drug Enforcement Administration
Department of Emergency Services
Department of Information Services
Department of Labor & Industries
Duvall Police Department
Elma Police Department
Enumclaw Police Department
Everett Police Department
Federal Bureau of Investigations
Grays Harbor Sheriff's Office
Hood Canal Communications
Immigrations and Customs Enforcement
Issaquah Police Department
King County Department of Transportation
King County International Airport
King County Jail
King County Sheriff's Office
Kent Fire Department
Kent Police Department
Kirkland Police Department
Kitsap County Sheriff's Office
Lacey Police Department
Lincoln County Sheriff's Office
Mercer Island Police Department
Monroe Police Department
Northwest Community Response Unit
Northwest High Intensity Drug Trafficking Area (HIDTA)
Northwest Regional Internet Crimes Against Children Task Force (ICAC)
Pierce County Sheriff's Office
Port Angeles Police Department
Port of Seattle Police Department
Redmond Police Department
Renton Police Department
San Juan County Sheriff's Office
SeaTac Police Department
Seattle Joint Terrorism Task Force
Seattle Police Department
Snohomish County Sheriff's Office

Spokane Police Department
Squaxin Island Police Department
Stillaguamish Courts & Justice Services
Tacoma Police Department
Thurston County Sheriff's Office
Tukwila Police Department
U.S. DOVA Police Department
United States Coast Guard Auxiliary
US Courts
US Department of Justice
US National Park Service
Veterans Affairs Police Department
Washington Department of Corrections
Washington State Patrol
Westport Police Department

Educational Institutions

University of Washington
Highline Community College

Non-Profit Associations

Computer Technology Investigators Network
Puget Sound Violent Crimes Investigators Association
Washington Narcotics Commanders Conference
Washington State Bar Association (CLE credit)
National Business Institute (CLE credit)
Association of Certified Fraud Examiners (CLE credit)
Puget Sound Investigators Association
Northwest Legal Training Professional
Washington State Crime Prevention Association
King County Domestic Violence Investigators Association (CLE credit)

Law Firms

Bullivant Houser Bailey, Seattle, WA (CLE credit)
Bullivant Houser Bailey, Portland, OR (CLE credit)
Bullivant Houser Bailey, San Francisco, CA (CLE credit)
Betts Patterson & Mines, Seattle, WA (CLE credit)
Donchez Law Firm, Edmonds, WA
Williams Kastner Gibbs, Seattle, WA
Moss Adams LLP, Seattle, WA