

RICHARD ZUECH

Miami Beach, FL • rich@richardzuech.com • <http://www.richardzuech.com>

PROFILE

Technologist with a background in machine learning, big data, and statistics. Research publications are focused on Cybersecurity, but other research interests include Bioinformatics and Social Media. Fluent in analyzing business requirements and processes to fit best with technology.

EDUCATION

PhD Candidate, Computer Science – December 2018 (estimated)
Florida Atlantic University; Boca Raton, Florida

M.S. Computer Engineering, Minor in Business – December 1999
Florida Atlantic University; Boca Raton, Florida

Bachelor of Electrical Engineering Degree – December 1996
Georgia Institute of Technology; Atlanta, Georgia

WORK EXPERIENCE

Database Administrator – City of Miami Beach (November 2004 – Present)

- Administer over 400 databases with one other Database Administrator
- Administrator the City's (Enterprise Resource Planning) ERP system
- Built Extract, Transform, and Load (ETL) processes for a financial data mart. Implemented a web application generating \$700,000 annual revenue while automating work previously done by 6 employees: <https://secure.miamibeachfl.gov/lienresearch/>
- Lead Administrator for Laserfiche which is the City's Enterprise Electronic Document Management System (EDMS) system
- Develop complex Reports with Crystal Reports and SQL Server Reporting Services
- Research Industry Best Practices and present recommendations as appropriate
- Utilize Spotlight and other 3rd party products to manage infrastructure
- Conducted security audits on the City's Network

Adjunct Professor – Miami Dade College (September 2011 – December 2011)

- Taught courses in Computers and Electrical Engineering.

Information Technology Specialist III – City of Miami Beach (April 2002 – November 2004)

- Chaired the Committee for Application Development Standards
- Led in-house development efforts for the City's website and conducted due diligence on vendor's products
- Instituted a three phase development process with source code control from development to pre-production to production

Technology Consultant – Quaxar.com, Inc. (August 2000 to September 2001)

- Team Leader on projects for the following clients: Telefonica B2B, Intercontinental Hotels; and assisted in project to monitor 20% of the power generated in Mexico for CFE
- Engaged in business development activities
- Developed applications in Java, Perl, and JavaScript
- Provided System Administration on Red Hat Linux, Solaris (Intel), SCO, and Windows NT/2000/98
- Performed Database Administration on Oracle 8i, Informix Online Version 5.10, Informix Dynamic

RICHARD ZUECH

Miami Beach, FL • rich@richardzuech.com • <http://www.richardzuech.com>

Server Version 7.3, and MySQL

- Installed, configured, and maintained a Raptor Firewall (on NT) and provided general Network Administration

Perl Developer (Consultant to IBM) – Maxim Group (July 2000 to August 2000)

- Lead Programmer for migrating IBM's European E-Commerce computer sales site in Latin America
- Focused on functionality for Brazil and Argentina; significantly improved regional shipping and tax calculations systems
- Established programming environment for IBM staff

Senior Programmer Analyst – USite IFC, Inc. (September 1999 to May 2000)

- Designed and implemented programming solutions for non-profit web portal (www.usite.net)
- Engineered technical specifications and engaged in system architecture and site maintenance

Director of Technology, Co-founder – Subasta.com, Inc. (March 1999 to September 1999)

- Developed and maintained an electronic commerce Spanish speaking auction site (Subasta.com)
- Managed and trained junior developer
- Enhanced system performance, reliability, and security
- Managed all technical projects
- Migrated the site from MySQL to Oracle and from Linux to Solaris

Associate Quality Engineer – Lambda Novatronics Incorporated (December 1997 to January 1999)

- Ensured conformance to quality specifications at both the system level and product level for military power supplies and avionics
- Chaired the Material Review Board (a board comprised of Senior Engineers) and dispositioned nonconforming material
- Audited systems to ensure ISO 9001 compliance
- Served as a member of the Failure Review Board
- Developed numerous database applications that focused on Quality Assurance

Jr. Design Engineer, Reliability Section – Nacom Corporation (January 1997 to August 1997)

- Primary duty was product reliability in an automotive electronics manufacturing environment
- Additional duties were design review, failure analysis, parts localization, and manufacturing support
- Served as a member in Kaizen and Process Improvement Teams
- Created an automated testing system with a mainframe, measuring devices, and lab equipment to conduct advanced reliability research on Conductive Anodic Filament

TECHNICAL SKILLS & TOOLS

Machine Learning: classification, regression, clustering, feature engineering

Statistical Methods: regression models, hypothesis testing and confidence intervals, and dimensionality reduction

Software and Programming Languages: Weka (data mining package), Apache Hadoop, Apache Spark, SQL Server, Oracle, MySQL, Access, Informix, VB.Net, ASP.Net, PHP, C#, Java (JSP), Android, ASP, Perl, SQL, JavaScript, C/C++, VBScript, Visual Basic, Pascal, Fortran, Assembly, HTML, Enterprise Resource Planning (ERP) systems, and Electronic Document Management Systems (EDMS).

RICHARD ZUECH

Miami Beach, FL • rich@richardzuech.com • <http://www.richardzuech.com>

Selected Coursework: Data Mining and Machine Learning, Big Data Analytics, Advanced Data Mining and Machine Learning, Computer Data Security, Computer Performance Modeling, Android Components, and Software Engineering.

ACADEMIC AWARDS AND HONORS

Science Communications Fellowship – Awarded in February 2014 from the Patricia and Phillip Frost Museum of Science (Miami Science Museum) – <http://bird.miamisci.org/www/science-fellows.html>

Research Grant - Received from Florida Atlantic University's Graduate Research and Inquiry Program (GRIP) – May 2016 – “Generating Cybersecurity Data Sets” – <http://www.fau.edu/graduate/grip-grant/awardees.php>

CERTIFICATIONS

GIAC Network Forensics Analyst – Awarded September 2016 – SANS FOR572 Advanced Network Forensics and Analysis – <http://www.giac.org/certified-professional/richard-zuech/154777>

GIAC Certified Intrusion Analyst – Awarded June 2017 – SANS SEC503 Intrusion Detection In-Depth – <https://www.giac.org/certified-professional/richard-zuech/154777>

Microsoft SQL Server 2000 – Microsoft Certified Professions (Expired) – Exam 70-228 – Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition

SELECTED PRESENTATIONS

“Emerging Data Science Trends for IT Leaders” – Florida Local Government Information Systems Association (FLGISA) – July 27, 2016 – http://flgisa-members.flcities.com/FLGISAAAnnualConference/Agenda/Richard_Zuech.aspx

"Network Traffic Prediction Models for Near-and Long-Term Predictions" – 2014 IEEE International Conference On Bioinformatics and Bioengineering (BIBE) – November 2014

SELECTED PUBLICATIONS

Zuech R, Khoshgoftaar TM, Wald R (2015) Intrusion Detection and Big Heterogeneous Data: a Survey. Journal of Big Data 2(3):1–41 doi:10.1186/s40537-015-0013-4 <http://www.journalofbigdata.com/content/2/1/3> (Highly accessed)

Zuech R, Khoshgoftaar TM, Seliya N, Najafabadi MM, Kemp C (2015) A New Intrusion Detection Benchmarking System. In: Proceedings of the Florida Artificial Research Society (FLAIRS), 2015 Twenty-Eighth International Conference On. AAAI Press, Hollywood, FL, USA.

Zuech R and Khoshgoftaar TM (2015) A Survey on Feature Selection for Intrusion Detection. In: Proceedings of the 21st ISSAT International Conference on Reliability and Quality in Design On. ISSAT, Philadelphia, PA, USA.

Wald R, Villanustre F, Khoshgoftaar TM, Zuech R, Robinson J, Muharemagic E (2014) Using feature selection and classification to build effective and efficient firewalls. In: Information Reuse and Integration (IRI), 2014 IEEE 15th International Conference On. IEEE, San Francisco, CA, USA. pp 850-854

RICHARD ZUECH

Miami Beach, FL • rich@richardzuech.com • <http://www.richardzuech.com>

Wald R, Khoshgoftaar TM, Zuech R, Napolitano A (2014) Network Traffic Prediction Models for Near- and Long-Term Predictions. In: Bioinformatics and Bioengineering (BIBE), 2014 IEEE International Conference On. IEEE, Boca Raton, FL, USA. pp 362–368

Wheelus C, Khoshgoftaar TM, Zuech R, Najafabadi MM (2014) A Session Based Approach for Aggregating Network Traffic Data--The SANTA Dataset. In: Bioinformatics and Bioengineering (BIBE), 2014 IEEE International Conference On. IEEE, Boca Raton, FL, USA. pp 369–378

Najafabadi MM, Khoshgoftaar TM, Kemp C, Seliya N, Zuech R (2014) Machine Learning for Detecting Brute Force Attacks at the Network Level. In: Bioinformatics and Bioengineering (BIBE), 2014 IEEE International Conference On. IEEE, Boca Raton, FL, USA. pp 379-385