

TONY DUNSWORTH

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EDUCATION AND CERTIFICATION

Doctor of Philosophy (PhD), Data Science • National University—San Diego, CA (3.97/4.00 GPA, Dean's List)

Dissertation (Principal Investigator): Automated Forecasting Models for Public Safety

- Developed and evaluated automated forecasting models to improve resource allocation for primary 911 centers using ARIMA models and machine learning techniques, enhancing prediction accuracy by 50%.
- Applied advanced statistical methods to analyze historical emergency response data and optimize resource distribution.

Master of Science (MS), Data Analytics • Western Governors University—Salt Lake City, UT (3.5/4.0 GPA)

Master's Project (Principal Investigator): COVID-19 Mitigation Techniques in 911 Centers

- Conducted analysis using R and Python to measure the impact of COVID-19 protocols on emergency response times, leading to a 20% quicker response time.
- Presented findings to stakeholders, contributing to the development of improved operational policies for 911 centers.

Bachelor of Science (BS), Software Engineering • Western Governors University—Salt Lake City, UT (3.5/4.0 GPA)

Capstone Project (Principal Investigator): Inventory Control System Development

- Designed and implemented an inventory control system in Java, integrating MySQL for data management.

Master of Information Systems (MIS) • University of Phoenix—Kansas City, MO (3.98/4.00 GPA, Honors)

Bachelor of Arts (BA), Linguistics • University of Kansas—Lawrence

- Studied Russian, French, and Japanese

SAS Certified Base Programmer for SAS 9 • SAS Institute Inc.—Cary, NC

Certified Internet Webmaster Web Design Specialist Certification • Certification Partners—Tempe, AZ

TECHNOLOGIES

SQL Server • PostgreSQL • MySQL • R • Python • Julia • Quarto • Tableau • Apache • IIS • MySQL • Java • JavaScript
PHP • SAS • Windows Server • Next Generation 9-1-1 (NG911) • Linux • Machine Learning Techniques • Typst • LaTeX

INSTRUCTIONAL AND MENTORING EXPERIENCE

Database Administrator II • City of Alexandria—VA

2014–present

- Trained and mentored CAD managers in data analysis and public safety systems, enhancing role transitions and boosting efficiency by 10%.
- Provided ongoing guidance in using SQL, Python, R, and Julia for operational reporting and forecasting, increasing report accuracy by 50% and improving the communication of information.

CompTIA SME Technical Advisory Committee Member • CompTIA—Downers Grove, IL

2022–present

- Mentored and guided new subject matter experts in developing certification exams, ensuring adherence to quality standards and exam consistency.
- Developed and reviewed exam objectives using expertise in data analytics and database administration.

Computer Aided Dispatch Manager • Johnson County Sheriff's Office—Olathe, KS

2010–2014

- Enhanced staff competency and reduced on-boarding time by 20% through the development and management of LMS-based courses to establish a dispatcher training school.
- Led curriculum development using instructional design principles, increasing training program effectiveness by 20%.

INDUSTRY EXPERIENCE

- Database Administrator II • City of Alexandria—VA 2014–present
- Administered and maintained 20+ databases supporting 911 center operations using SQL Server and PostgreSQL, ensuring maximum uptime and data accuracy, improving service reliability by 20%.
 - Develop detailed reports and performance metrics using SQL, Python, R, and Julia to provide actionable insights for management, improving decision-making processes by 10%.
 - Design predictive staffing models using machine learning techniques and historical data to optimize resource allocation, contributing to 15% reduction in staffing costs.
 - Collaborate with regional and national stakeholders to develop NG9-1-1 interoperability standards, enhancing cross-agency communication.

- Computer Aided Dispatch Manager • Johnson County Sheriff's Office–Olathe, KS 2010–2014
- Administered multiple public safety computer systems across Windows Server and Linux environments, ensuring continuous operation and achieving 99.5% up-time.
 - Created custom performance reports using SQL, R, and Python to analyze telecommunicator efficiency, improving response times by 10%.
 - Developed web-based solutions using JavaScript, PHP, and MySQL to improve internal communications and resource management, leading to an 15% increase in operational efficiency.

- Web Developer • Independence School District—MO 2008–2010
- Developed and deployed web solutions using industry-standard practices, including HTML5, CSS3, and JavaScript, to support district-wide educational initiatives.
 - Managed Apache and IIS servers to ensure reliable access to web services, achieving 50% reduction in downtime.
 - Deployed a new LMS for educators, migrating legacy courses and improving usability, increasing engagement by 10%.

PUBLICATIONS

- Conveyance of Emergency Incident Data Object Between Next Generation (NG9-1-1) Systems and Applications* (National Emergency Number Association (NENA) STA-2024.1b-2023)–Contributor and co-editor 2023
- NENA Rules for Use of Version Control Repositories (NENA-ADM-012.1-2022)–Contributor 2022
- NG9-1-1 Call Processing Metrics Standard (NENA-STA-019.2-2022)–Contributor 2022

PRESENTATIONS

- It's About Time* • CentralSquare Engage Conference 2026
- From Math to Meaning* • NENA Standards and Best Practices 2026
- Data Collection Needs for Call Processing and Staffing Guidelines WG* • NENA Joint Committee Meetings 2025
- Do You Speak Statistics* • NENA National Conference 2025
- Applying Analytics to 9-1-1* • Virginia Conference on Innovation in Public Safety 2025
- Data: Not Just a Star Trek Character* • NENA National Conference 2024
- Exploratory Data Analysis in the PSAP* • Virginia Joint APCO/NENA Summit 2024
- 911 Data Analytics* • Virginia Joint APCO/NENA Summit 2023
- EIDO Conveyance Update* • NENA Standards and Best Practices 2023
- 911-988 Interactions* • NENA Standards and Best Practices 2023
- PSAP Scheduling* • NCT911 Early Adopters Summit 2023

LEADERSHIP

- Working Group Leader • Association of Public Safety Communications Officers, Daytona, FL 2025
- Working Group Leader for the Emergency Communications Center Key Performance Indicators working group
- President • Northern Neck Toastmasters—Warsaw, VA 2024
- Guide Toastmasters meetings and assist in the development and growth of members

- Working Group Leader (Technical) • National Emergency Number Association, Alexandria, VA 2022
- Technical Subgroup leader for the 911-988 interchange committee
- Working Group Leader • National Emergency Number Association, Alexandria, VA 2018
- Working group leader for the EIDO Conveyance Working Group
 - Working group leader for the Staffing Guidelines Working Group
 - Working group leader for the Call Processing Metrics Working Group
 - Working group leader for the NG9-1-1 Data Flow Working Group

PROFESSIONAL SOCIETY MEMBERSHIPS

International Institute of Forecasting—Medford, MA	2024–present
Royal Statistical Society—London, United Kingdom	2023–present
National Emergency Number Association (NENA)—Alexandria, VA	2010–present
Association of Public Safety Communications Officers (APCO)—Daytona Beach, FL	2010–present
Toastmasters, Northern Neck Chapter—Warsaw, VA	2024–2025

LANGUAGE FLUENCY

- French – Fluent
- Spanish – Conversational
- Japanese – Conversational
- Russian – Proficient
- Italian – Proficient
- Irish – Proficient