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, resulting in 50% enhanced prediction accuracy.
- 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, resulting in a 20% improvement in 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, Graduated with 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 (NG9-1-1) • Linux • Machine Learning Techniques • Typst • LaTeX

INSTRUCTIONAL AND MENTORING EXPERIENCE

Database Administrator II • City of Alexandria—VA   2014–present
- Trained and mentored CAD managers on data analysis methodologies and public safety systems, ensuring smooth role transitions and consistent data-driven decision-making, resulting in 10% improvement in operational efficiency.
- 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 science and database administration.

Computer Aided Dispatch Manager • Johnson County Sheriff's Office—Olathe, KS   2010–2014
- Designed and maintained courses within an LMS to create a dispatcher training school, improving staff competency and reducing onboarding time by 20%.

- Led curriculum development using instructional design principles, resulting in an 20% increase in training program effectiveness.

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% uptime.
- 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, leading to 10% increased engagement.

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

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   2022

LEADERSHIP

President Northern Nect 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 several technical working groups.

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