Dr. Tonya Fields is a Cybersecurity Researcher and Operations Manager in the Cybersecurity Complex at Norfolk State University. Tonya assisted with the installation and continued operation of the testbeds within the Cybersecurity Complex Data Center. The testbeds support research in the following major focus areas:

Big Data Eco Systems – built using Hadoop and Spark clusters
Artificial Intelligence & Machine Learning – built using NVIDIA V100 GPU High-Performance Computing Clusters
Cloud Computing – built using OpenStack Cloud Service

Dr. Fields played a major role in the following NSU milestones:

- Successful application and approval of the National Security Agency and Department of Homeland Security (NSA/DOD) designated Center of Excellence of Cyber Defense Education at Norfolk State University. NSU was the first HBCU in Virginia and the 3rd in the nation to receive the designation. Her efforts contributed to the first award in 2009, as well as the subsequent designations in 2015 and 2022
- Successful SCHEV application, approval and launch of the fully online Master's Degree in Cybersecurity at Norfolk State University. The first cohort began in 2015
- Management of the Information Assurance Research and Development Institute (IA-REDI)
- Management of the Center of Excellence in Cyber Security at NSU

Dr. Fields entered academia after serving 26 in the United States Navy. She is a retired Information Systems Technician Master Chief (ITCM). During her naval career, she maintained secure long-range defense communications networks. She has over 20 years' experience with Communications Security (COMSEC), Cryptographic Material System (CMS) and Electronic Key Management System (EKMS).

Dr. Tonya Fields holds a BS (1996) and a MS (2012) degree in Computer Science from Norfolk State University (NSU) and a Doctorate of Professional Studies (DPS) in Computing from Pace University (2021). Her research interests falls under the umbrella of Artificial Intelligence (AI) in the areas of Machine Learning for Cybersecurity using Natural Language Processing (NLP), and Natural Language Generation (NLG) technologies

Recent publications:

1. T.L Fields "Sensitivity of Machine Learning Algorithms to Dataset Drift for the Natural Language Processing Application of Spam Filters", Doctorate Dissertation, Computer Science Department, Seidenberg School of CSIS, Pace University, Pleasantville, New York, 2021.

2. T. L. Fields, G. Hsieh, and J. Chenou, "Mitigating Drift in Time Series Data with Noise Augmentation," 6th Annual Conference on Computational Science & Computational Intelligence (CSCI'19), 2019.
3. J. Chenou, G. Hsieh, and T. L. Fields, "Radial Basis Function Network: Its Robustness and Ability to Mitigate Adversarial Examples," 6th Annual Conference on Computational Science & Computational Intelligence (CSCI'19), 2019.
4. J. Chenou, G. Hsieh, and T. L. Fields, "Increasing the Robustness of Deep Learning with Colored Noise Augmentation," 18th International Conference on Security and Management (SAM'19), 2019.
5. G. Hsieh, T. L. Fields, B. Kc and J. Yurko-Galvin, "Building a Cybersecurity Research and Experimentation Testbed," in CSCI'18, Las Vegas, 2018.