

# Scott T. Seidenberger

Data Science and Analytics Institute  
University of Oklahoma (OU)  
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## Education

**University of Oklahoma (OU)**, Norman, OK

Ph.D., Data Science and Analytics, exp. 2026

Topics: Distributed Systems, Statistical Modeling, Cybersecurity, Web3

Chair: Dr. Anindya Maiti

**The Pennsylvania State University (PSU)**, State College, PA

M.P.S., Data Science and Analytics, 2020

Topics: NLU/NLP, Machine Learning

**Cornell University**, Ithaca, NY

B.S. with Honors, Industrial & Labor Relations, 2016

Topics: Computational Social Science, Statistics & Information Science

## Publications

### Preprints and Manuscripts

1. Seidenberger, S., Beret, M., Wijewickrama, R., Jadhwal, M., & Maiti, A. (2024). NinjaDoH: A Censorship-Resistant Moving Target DoH Server Using Hyperscalers and IPNS. arXiv preprint arXiv:2411.02805.
2. Seidenberger, S., Ajisegiri, O., Pursell, N., Raja, F., & Maiti, A. (2024). A Framework to Audit Email Address Privacy and Analyze Email Marketing Practices of Online Services and Apps. arXiv preprint arXiv:2410.08302.
3. Seidenberger, S., Sokol, A., & Maiti, A. (2023). Stake Your Claim: Zero-Trust Validator Deployment Leveraging NFTs and Smart Contracts in Proof-of-Stake Networks. arXiv preprint arXiv:2308.01158.

### Conference Papers

4. Dornick, C., Kumar, A., Seidenberger, S., Seidle, E., & Mukherjee, P. (2021). Analysis of patterns and trends in COVID-19 research. *Procedia Computer Science*, 185, 302-310. doi:10.1016/j.procs.2021.05.032
5. Seidenberger, S., & Collins, C. J. (2018). Can government agencies compete with for profit companies for software talent? Examining the role of employer branding and government attitudes in attracting student applicants. *Academy of Management Meetings*, Chicago. doi:10.5465/AMBPP.2018.13596symposium

### Review Articles & Book Reviews

6. Seidenberger, S. (2016). A new role for human resource managers: Social engineering defense. *Cornell HR Review*. doi:1813/73018

7. Seidenberger, S. T. (2018). Why Air Forces Fail: The Anatomy of Defeat. *Air & Space Power Journal*, 32(1), 125-127. Available: [link.gale.com/apps/doc/A531710168/AONE?u=anon ee24c06d](https://link.gale.com/apps/doc/A531710168/AONE?u=anon+ee24c06d)
8. Seidenberger, S. T. (2018). Sidewinder: Creative Missile Development at China Lake. *Air & Space Power Journal*, 32(4), 103-105. Available: [link.gale.com/apps/doc/A571023068/AONE?u=anon 14487f7a](https://link.gale.com/apps/doc/A571023068/AONE?u=anon+14487f7a)

### Military Publications

9. Seidenberger, S. T. (2022). Airborne Cooperative EW Integrated Reprogrammable Exchange (ACEWIRE). *Classified*. Led to \$100k award to test system, initial tests successful and under active development. <https://www.acc.af.mil/News/Article-Display/Article/2992446/>
10. 3-1 AWACS (2022). *Classified*. First Author of Chapter on Electromagnetic Warfare.
11. 3-3 AWACS (2022). *Controlled Unclassified*. Second Author of Chapter on Mission Planning Air Operations.
12. Seidenberger, S. T. (2018) Space Weather Effects on Satellite-based Airborne Communications in USCENCOM. *Classified*.

### Research Grants

#### 1. [Co-PI] Ethereum Foundation Academic Grant (2024):

- *Change Analysis and Network Anomaly Recognition System (CANARY)*: Funds to create a realtime surveillance and early warning system for the Ethereum peer-to-peer (P2P) network. Utilizing advanced statistical methodologies and time series changepoint detection algorithms, CANARY will detect anomalies and potential security threats, ensuring the network's integrity and resilience. A public-facing dashboard will provide real-time insights into network health, fostering transparency and community engagement.
- *Award Amount*: \$24,000

#### 2. [Co-PI] Ethereum Foundation Academic Grant (2024):

- *Secure Ethereum Anonymity & Defense Relay via Advanced Global Overlay Networking (SEADRAGON)*: Funds creating a lightweight, adaptable, purpose-built virtual private network (VPN), obscuring node public IP addresses from potential attackers, providing a significant increase in privacy. Furthermore, the creation of a resilient overlay network will allow nodes to maintain operation and mitigate attacks through authenticated peer connections, ensuring network integrity and robustness against external and internal threats.
- *Award Amount*: \$17,000

#### 3. [Co-PI] Storj, Inc. Grant (2024):

- *Rapid Activation via Decentralized Snapshots (RADS)*: Funds project to enhance the security and liveness of Ethereum node operators by leveraging web3 decentralized storage to rapidly deliver blockchain snapshots to minimize time-to-live (TTL) for new or recovering nodes.
- *Award Amount*: \$4,000

#### Ethereum DevCon Academic Fellowship (2024):

- Competitively selected for the largest, globally recognized Ethereum developer and community conference as an academic fellow.
- *Award Amount*: \$3,000

## Teaching

### **Financial Engineering**, DSA 5303, Summer 2024 - Present

Lead Teaching Assistant

- Leads two online sections for a total of approximately 30 masters students.
- Hosts weekly office hours, graded assignments and final project.
- Produced YouTube instructional video for use of containerized environments to accomplish financial engineering workloads.

– "Deploy RStudio with Docker and Create Professional PDFs: Use R and Python Together!"

### **Advanced Signals Intelligence**, USAF, 2020-2022

Course Director and Lead Instructor

- Instructed over 1,000 Air Force personnel in advanced signals intelligence curriculum.
- Developed curriculum refresh to include new space based integration with air assets.
- Course format included lectures, workshops, demonstrations, simulations, and live airborne capstone events.
- Certified instructor by National Reconnaissance Office FADE program office.

### **Instructor Air Battle Manager**, USAF, 2019-2022

- Instructed hundreds of students in a one-on-one setting as an Instructor Air Battle Manager.
- Routinely presented large format lectures for audiences of hundreds of Air Force personnel.
- Topics ranged from Military Art and Science, Strategy, Air Combat, to Aircraft Operations.

## Invited Talks

"Crafting Cutting-Edge Applications for a Decentralized Web." Nov 2023

Hacklahoma 2023, Norman, OK

Delivered lecture and workshop to students participating in Hacklahoma, built full demo of web3 technologies.

<https://github.com/seidenbergerscott/web3workshop>

"Beyond Horizon Range Engagements." Sep 2022

Joint Requirements Council Offsite, Boeing Virtual Warfare Center, St. Louis, MO.

Audience: Vice Chairman of the Joint Chiefs of Staff, Commander USINDOPACOM,

Commander NORAD, Vice Chief of Naval Operations, Vice Chief of Staff of the Air Force,

DoD Chief Information Officer

"Integrating a New Generation of Warriors." May 2015

TEDx, Ithaca, New York.

Available: [youtube.com/watch?v=eDXRZkyw7\\_k](https://www.youtube.com/watch?v=eDXRZkyw7_k)

## Service

### **Reviewer**

- AISTATS 2025
- The WebConf 2025

- NeurIPS 2024
- Air and Space Power Journal 2017-2019

## Skills & Technologies

**Statistics:** Multivariate Analysis, Machine Learning, Bayesian Statistics, Natural Language Processing, Data Mining.

**Languages:** Python, R, SQL, Java.

**Cloud Environments:** AWS, Hybrid Cloud Deployments, (Proxmox & VMWare Hypervisors).

**Databases:** Elasticsearch, MongoDB, MySQL, Ethereum Blockchain (EVM).

## Industry Experience

**Epoch Forge**, Washington, DC

Co-founder & Managing Director, 2023 - Present

<https://epochforge.io>

- Leads a digital infrastructure provider specializing in node operations for web3.
- Secures more than \$10 million of customer funds through validators on public blockchains.
- Developed, deployed, and operates hybrid cloud that implements all infrastructure as code with software supply chain checkpoints.
- Developed and deployed an automated market maker in targeted liquidity markets.

**Advanced Strategic Insight**, Washington, DC

Defense Analyst, 2023

- Led internal research on human-machine teaming efforts across contract portfolio, leading to company whitepaper on autonomous agent integration with air operations.
- Lead analyst for SBIR Phase II proposal for USSF capability enhancement.
- Authored technical briefs for organizations such as DARPA, the Dept. of the Air Force Rapid Capabilities Office, and Space Systems Command.

## Military Service - United States Air Force

### Formal Training

2021, Electronic Warfare Coordinator Course, 479 Operations Support Squadron, NAS Pensacola, FL

2020, Air Battle Manager Instructor upgrade, 966 Airborne Air Control Squadron, Tinker AFB, OK

2019, Electronic Combat Officer training, 966 Airborne Air Control Squadron, Tinker AFB, OK

2018, Student, Air Weapons Officer training, 966 Airborne Air Control Squadron, Tinker AFB, OK

2017, Water Survival School, Fairchild AFB, WA

2017, Survival Evasion Resistance Escape (SERE), Fairchild AFB, WA

2017, Air Battle Manager training, 337 Air Control Squadron, Tyndall AFB, FL

### Assignments

2020-2023, Wing Chief Electromagnetic Warfare Officer, 552 Operations Support Squadron, Tinker AFB, OK

2019-2020, Chief of Squadron Innovation, 964 Airborne Air Control Squadron, Tinker AFB, OK  
2018-2019, Air Weapons Officer, 964 Airborne Air Control Squadron, Tinker AFB, OK  
2017-2018, Student, Air Weapons Officer, 552 Training Squadron, Tinker AFB, OK  
2016-2017, Student, Undergraduate Air Battle Manager Training, 337 Air Control Squadron, Tyndall AFB, FL

### **Selected Appointments**

2021-2022 Joint Mission Commander, NIMBLE FIRE, Joint Staff J8  
2021-2022 Lead E-3 Planner, NEPTUNE HAWK, Pacific Air Forces  
2020-2022 Principal Operations and Technical Advisor, AI Integration & Directed Energy, Air Force Research Labs  
<https://www.afrl.af.mil/News/Article/2929406/>  
<https://www.afrl.af.mil/News/Article-Display/Article/2675775/>  
2019 Liaison Officer to Joint Interagency Task Force South. Planned air support to counter-narcotics operations.  
<https://www.southcom.mil/News/PressReleases/Article/2225606>

### **Flight Information**

Aircraft: E3B/C/G AWACS  
Rating: Air Battle Manager  
Flight Hours: 800+ (300+ Combat)  
Certified Mission Commander

### **Awards**

2023 Wing Company Grade Officer of the Year  
2021 Group Electronic Combat Officer of the Year  
2021 Group Company Grade Officer of the Month (Deployed)  
2017 Top Graduate, Air Battle Manager Training

### **Decorations**

Air Medal with 1 Oak Leaf Cluster  
Air and Space Commendation Medal  
Meritorious Unit Award with 1 Oak Leaf Cluster  
Combat Readiness Medal  
National Defense Service Medal  
Inherent Resolve Campaign Medal with 1 Service Star  
Global War on Terrorism Service Medal  
Air and Space Expeditionary Service Ribbon with Gold Border with 1 Oak Leaf Cluster

### **References**

**Anindya Maiti, PhD**, Assistant Professor, Computer Science and Data Science, University of Oklahoma  
**Christopher Collins, PhD**, Professor of Human Resource Studies, ILR, Cornell University

*Scott Seidenberger*

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**Major Erik Grimes** Headquarters Air Force, Pentagon

**November 9, 2024**