

STEPHEN S. HAMILTON

Curriculum Vitae

February 2023

Office:

Army Cyber Institute
United States Military Academy
West Point, NY 10996
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stephen.hamilton@westpoint.edu

Position: Director, Army Cyber Institute.

Education

- Ph.D.** Computer Science, May 2017
Johns Hopkins University, Baltimore, MD
Dissertation Title: "Distributed Parallel Extreme Event Analysis in Next Generation Simulation Architectures"
Advisor: Randal Burns
- M.S.** Software Engineering
Auburn University, Auburn Alabama
Thesis Title: "Secure Jam Resistant Key Transfer without a pre-shared key"
Advisor: John A. Hamilton
- B.S.** Computer Science, May 1998
United States Military Academy, West Point, NY

EXPERIENCE

Dec 2022 – Present	Director, ACI
April 2020 – Dec 2022	Chief of Staff and Technical Director, ACI
May 2019 – April 2020	Technical Director, ACI
August 2017 – May 2019	Research Scientist, ACI
August 2011 – June 2014	Cyber Operations Planner, USCYBERCOM
May 2008 – May 2011	Instructor, Electrical Engineering and Computer Science
May 2006 – May 2007	Automation Officer, 13 th Sustainment Command
April 2005 – May 2006	A Co Company Commander, 57 th Signal Battalion
Aug 2002 – April 2005	Training and Automation officer, 57 th Signal Battalion
Dec 2000 – Jul 2002	Assistant Automation Officer, 3d Infantry Division G6
Nov 1998 – Dec 2000	Platoon Leader, D Co, 123d Signal Battalion

ACADEMIC RANKS

Jun 2021 – Present	Associate Professor, ACI, USMA (Academy Professor)
Aug 2019 – Jun 2021	Assistant Professor, ACI, USMA (Academy Professor)
Jul 2010-Aug 2011	Assistant Professor, EECS, USMA (rotating faculty member)
Jun 2008 – Jun 2010	Instructor, EECS, USMA (rotating faculty member)

TEACHING EXPERIENCE

United States Military Academy

- IT305 Theory and Practice of Military Information Systems (2008-2011)
- IS450 Principles of Distributed Application Engineering (2010-2011)
Significantly overhauled this course by changing the core technology from PHP to Ruby on Rails. This resulted in a more modern way of producing web applications utilizing the Model-View-Controller (MVC) design approach
- Capstone Advisor (2010-2011)
- IT394 Distributed Application Design (2018- 2020)
- CY394 Cloud Computing (2021-present)
- IT460 Cyber Policy, Strategy, and Operations (2019)

University of Maryland University College

- Databases, Word Processing, Spreadsheets (2000-2001 Bosnia-Herzegovina)

Research Interests

Software Defined Radios, data visualization, cyber policy, networking, network sensors, Internet of Things (IOT).

Publications:

[*POWs in the Age of the Internet*](#), Jan Kallberg, Todd Arnold, **Stephen Hamilton**, Mark Visger. Air & Space Operations Review, Volume 1 Issue 1, Spring 2022.

N. Pearce and **S. Hamilton**, "[IFF using Beamforming in Telemetry Beacons.](#)" 2021 IEEE Western New York Image and Signal Processing Workshop (WNYISPW), Rochester, NY, USA, 2021, pp. 1-5.

[*Silent Tuning: Matching a transmitter to an antenna without emitting a signal*](#), Robert Melville, **Stephen Hamilton**. MILCOM 2021.

[*Resiliency by Retrograded Communication - The Revival of Shortwave as a Military Communication Channel*](#). Jan Kalberg, **Stephen Hamilton**. IEEE IT Professional, June 2020.

Acceptance Rate: 63%

[*Electronic Warfare in the Suwalki Gap: Facing the Russian "Accompli Attack"*](#) Jan Kalberg, **Stephen Hamilton**, Matthew Sherburne. Joint Forces Quarterly 97, April 2020. Acceptance Rate: 45%

[*Portable Audio Frequency-Shift Keying Sensors using a Hamshield Mini*](#). Nolan Pearce, **Stephen Hamilton**, Kate Duncan. Digital Communications Conference, September 2019.

[*Cyber Integrating Architecture*](#) Brett Lindberg, **Stephen Hamilton**, Brian Lebednik, and Kyle Hager. Small Wars Journal Mad Scientists Initiative, August 2018.

[*Extreme Event Analysis in Next Generation Simulation Architectures*](#), **Stephen Hamilton**, Randal Burns, Charles Meneveau, Perry Johnson, Peter Lindstrom, John Patchett, and Alex Szalay. International Super Computing Conference High Performance 2017, June 2017, pp 277-293. **Acceptance Rate: 20%**

[*Analysis of geometrical and statistical features of Lagrangian stretching in turbulent channel flow using a database task-parallel particle tracking algorithm*](#). Perry Johnson, **Stephen Hamilton**, Randal Burns, Charles Meneveau. Physical Review Fluids, January 2017.

[*Information Dissemination over low-bandwidth links*](#). Thomas R. Dean, **Stephen S. Hamilton**. 2011 IEEE Long Island Systems, Applications and Technology Conference. 6 May 2011.

[*Increasing Organization Efficiency through Software Architecture: A case study of the JTF-GNO.*](#), **Stephen Hamilton**, Eric Imsand, John A. Hamilton Jr. MILCOM 2010 **Acceptance Rate: 56%**

[*Secure Jam Resistant Key Transfer: Using the DoD CAC Card to Secure a Radio Link by Employing the BBC Jam Resistant Algorithm*](#), **Stephen Hamilton**, John A. Hamilton Jr. MILCOM 2008

[*Validating a network simulation testbed for army UAVs*](#) **Stephen Hamilton**, Timothy Schmoyer and John Hamilton Jr. Winter Simulation Conference, 2007.

[*A Global Look at Authentication*](#) **Stephen Hamilton**, Martin Carlisle and John Hamilton Jr. Information Assurance and Security Workshop, 2007.

[*Integrating Heterogeneous Systems for Real-time Distributed Command and Control*](#) Curt A. Carver, **Stephen Hamilton**, John M.D. Hill. International Symposium on Collaborative Technologies and Systems (CTS 2003), Orlando, Florida, January 19-23, 2003.

Other Publications

West Point Balloon Satellite. **Stephen Hamilton**. CQ-VHF Fall 2011, p. 28.

[*The IDOLL Project \(Information Dissemination over Low-bandwidth Links\)*](#), **Stephen Hamilton**, Thomas Dean, CQ VHF Magazine Summer 2010 p. 42

[*Poor man's digitization of the battlefield - Army Tactical Command and Control Systems*](#) **Stephen Hamilton**. Army Communicator, Summer 2003.

Invited Talks and Presentations or Posters

[*Utilizing HF Communications in a Great Power Conflict*](#), invited talk at the Military Tactical Communications Summit, September 2020

Visualizing the Electromagnetic Spectrum in the Time Domain. **Stephen Hamilton**, Chuck Suslowicz. HamSCI Workshop, March 2020.

Communication in a Satellite Denied Environment. Panel Moderator, CyCon US 2019

Conquering the Skip Zone: Short Range Voice and Digital NVIS Communication **Stephen Hamilton**, Brian Lebednik, and Kyle Hager. HamSCI Workshop, March 2019.

Extreme Event Analysis in Next Generation Simulation Architectures, **Stephen Hamilton**, Randal Burns, Charles Meneveau, Perry Johnson, Peter Lindstrom, John Patchett, and Alex Szalay. International Super Computing Conference High Performance 2017, June 2017.

Increasing Organization Efficiency through Software Architecture: A case study of the JTF-GNO., **Stephen Hamilton**, Eric Imsand, John A. Hamilton Jr. MILCOM 2010 **Acceptance Rate: 56%**

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A Global Look at Authentication **Stephen Hamilton**, Martin Carlisle and John Hamilton Jr. Information Assurance and Security Workshop, 2007.

AWARDS: Describe any awards, military or civilian, which are not reflected on the Officer Record Brief.

Bronze Order of Mercury (Signal Corps Regimental Association award)

Honor Graduate, Signal Captain's Career Course

Team Player Award, EECS (2010)

PROFESSIONAL SOCIETIES:

Upsilon Pi Epsilon

Phi Kappa Phi (Life member)

Academic Computing Machinery (ACM)

Institute of Electrical and Electronics Engineers (IEEE)

Signal Corps Regimental Association (Life member)

CADET DEVELOPMENT

- Cadet ham radio club OIC (2009-2011, 2017-present)

- Assistant OIC American Institute of Chemical Engineers (2017-present)
- Cyber Leader Development Program mentor (2018-2019)
- Cadet Sponsor (2008-2011, 2017-present)
- Published two scholarly papers with cadet co-authors
- Advisor to the Cadet Balloonsat project, a joint effort between the Cadet Ham Radio club and the Astronomy club (2010-present)
- External Advisor to Black Knight Satellite Capstone 2018
- External reviewer for multiple EECS capstones 2018.

FACULTY DEVELOPMENT

- Course directed IT394 with one other faculty member
- Course directed IS450 with three other faculty members
- Published six scholarly papers with faculty co-authors
- USMA Master Teacher Program graduate (2009)

SERVICE

- Lead for creating Cloud Computing course for the newly created Cyber major
- Reviewer for St. Isidore award (2020)
- Assistant Scoutmaster (2012-2017)
- Toughman Competition event communications support (2018,2019)
- US CyCon paper reviewer (2017-2019)
- Patuxent Spring HOA Board Member (2014-present)
- Member Orange County Amateur Radio Club