RONALD E. THOMPSON, III

Medical Device Security Engineer & Usable Security Researcher

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RESEARCH INTERESTS

- Usable security and systems security for healthcare and critical infrastructure

- Hospital network and medical device security

- Threat modeling and vulnerability management

- Security advisory ecosystems and vulnerability reporting practices

- Human factors in cybersecurity decision-making

EDUCATION

Tufts University   Medford, MA
M.S./Ph.D. in Computer Science   *Expected May 2026*
Advisor: **Daniel J. Votipka**
Dissertation (Proposed): It's a Beautiful Day to Secure Patients: Operationalizing Usable Security for Clinical Resilience

University of Colorado Boulder   Boulder, CO
Post-Baccalaureate Studies in Computer Science   *2019 – 2020*

Georgetown University   Washington, DC
BA in Government; Minor: History   *2014*

PROFESSIONAL EXPERIENCE

Koninklijke Philips N.V.   *Health Technology and Consumer Technology Multinational*
Software Development (Security) Engineer   May 2026 - Pres.

MedCrypt   *Startup focused on medical device security*
Intern   May – Aug 2022

GroundWatch   *Startup focused on sensor fusion for US Army Special Operations*
CEO/Co-Founder   Jan 2020 – Aug 2021

Various   *1099 Consulting*
Data Engineering & Strategy Consulting   Mar - Dec 2016, Apr 2019 – Aug 2021

Point72 Asset Management   *Hedge fund with $13bn AUM*
Research Analyst, Healthcare Portfolio Team   Aug 2017 – Mar 2019
Associate, Market Intelligence   Dec 2016 - Aug 2017

Jeb! 2016 Inc.   *Presidential Primary Campaign*
Digital Analytics Director   Aug 2015 - Mar 2016
Cybersecurity Lead   Nov 2015 - Mar 2016
State Data Director, SC   Jan - Feb 2016

Booz Allen Hamilton   *Global information technology consultancy*
Consultant (Rapid Prototype Application Developer)   Apr – Aug 2015

Optimus Consulting   *Political Data Startup*
Data Engineer   Apr 2014 - Apr 2015

PUBLICATIONS

Peer-Reviewed Conference Proceedings

C.5 **Thompson, R. E.**, Khalid, H., Fisher, H., Votipka, R., & Votipka, D. "Your imaging may be stone-cold normal, but if they look sick, they're going to get admitted": An Investigation of Clinicians' Perceptions of Impact & Likelihood of Security Failures. *Proceedings of the 35th USENIX Security Symposium (USENIX Security '26).* [*Acceptance Rate: 14%*]

C.4 **Thompson, R. E.**, Sweet, H., Dameff, C., Tully, J., & Votipka, D. Beyond Clinical Risk: An Experimental Study of Cybersecurity Informed Consent and Patient Choice for Connected Medical Devices. *Proceedings of the 2026 Conference on Human Factors in Computing Systems (CHI '26').*

C.3 **Thompson, R. E.**, Boshar, L., Vasserman, E. Y., & Votipka, D. Navigating the Patchwork: Investigating the Availability & Consistency of Security Advisories. *Proceedings of the 2025 IEEE Secure Development Conference (SecDev '25').*

C.2 Kaur, H., Powers, C., **Thompson, R. E.**, Fahl, S., & Votipka, D. "Threat modeling is very formal, it's very technical, and it's also very hard to do correctly": Investigating Threat Modeling Practices in Open-Source Software Projects. *Proceedings of the 34th USENIX Security Symposium (USENIX Security '25).*

C.1 **Thompson, R. E.**, McLaughlin, M., Powers, C., & Votipka, D. "There are rabbit holes I want to go down that I'm not allowed to go down": An Investigation of Security Expert Threat Modeling Practices for Medical Devices. *Proceedings of the 33rd USENIX Security Symposium (USENIX Security '24).* [*Acceptance Rate: 18.3%*]

Workshop Papers

W.2 **Thompson, R. E.**, McLaughlin, M., Powers, C., & Votipka, D. (2024). An Investigation of Security Expert Threat Modeling Practices for Medical Devices. *Proceedings of the 2nd International Workshop on Re-design Industrial Control Systems with Security (RICSS), Co-located with ACM CCS.*

W.1 **Thompson, R. E.**, Red, M., Zhang, R., Kwon, Y., Dang, L., Pellegrini, C., Nesru, E., Jain, M., Chin, C., & Votipka, D. (2024). The Threat Modeling Naturally Tool: An Interactive Tool Supporting More Natural Flexible and Ad-Hoc Threat Modeling. *Proceedings of the Workshop on Security Information Workers (WSIW '24), Co-located with USENIX SOUPS 2024.*

Projects in Progress

I.5 A Patchwork of Sources: A Large-scale Evaluation of CVSS Variance in Practice. **Thompson, R. E.**, Boshar, L., Vasserman, E. Y., Votipka, D. Role: Project Lead.

I.4 Usability of Logging Made Easy. Jameel, M., **Thompson, R. E.**, Votipka, D., Bates, A. Role: Secondary Author.

I.3 Challenges with SBOM Adoption & Usability for Medical Devices. Zhao, Y., Kostick, L., Rushanan, M., **Thompson, R. E.** Role: Advising Author.

I.2 Developer Usage of AI Tools for Secure Development. Khalid, H., Sabater, A., **Thompson, R. E.**, Fulton, K., Votipka, D. Role: Third Author.

I.1 Development of LLM LLM-based tool to process and generate security advisories. **Thompson, R. E.***, Khalid, H.*, Votipka, D. Role: Joint First Author.

Posters & Abstracts

P.3 **Thompson, R. E.**, Boshar, L., Vasserman, E. Y., & Votipka, D. Navigating the Patchwork: Investigating the Availability & Consistency of Security Advisories. Poster presented at the *34th USENIX Security Symposium (USENIX Security '25').*

P.2 **Thompson, R. E.**, McLaughlin, M., Powers, C., & Votipka, D. "There are rabbit holes I want to go down that I'm not allowed to go down": An Investigation of Security Expert Threat Modeling Practices for Medical Devices. Poster presented at the *Twenty-First USENIX Symposium on Usable Privacy and Security (SOUPS '25).*

P.1 **Thompson, R. E.**, Koring'ura, S., Chetty, M., & Votipka, D. (2022). A Comparison of Account-Focused and Content-Focused Warnings on User Trust of Twitter Content. Poster presented at the *Eighteenth USENIX Symposium on Usable Privacy and Security (SOUPS 2022)*.

Articles & Commentary

A.1 Eichler, Daniel and **Thompson, Ronald E.** (2020). "59 Percent Likely Hostile". *War on the Rocks.* January 30, 2020.

FUNDING, HONORS & AWARDS

Research Funding & Fellowships

- Contributed ideas to the proposal for the Tufts team on "Hospital-Integrated Vulnerability Identification and Proactive Remediation (H-VIPER)", U.S. Advanced Research Projects Agency for Health (ARPA-H UPGRADE Program). (PI: B. Saltaformaggio, Tufts PI: D. Votipka)

- Led the proposal writing and idea generation for MedCrypt Cybersecurity Research Fellowship, MedCrypt Inc. ($60,000 to Tufts, supporting my research). 2023. (PI: D. Votipka)

- Contributed ideas to the proposal for "A Usable and Shareable Tool for Software Threat Modeling", Cisco Systems. ($100,000 to Tufts). (PI: D. Votipka)

Recognition & Impact

- *Media Mentions & Expert Commentary:*

  - Quoted in STAT News on FDA medical device cybersecurity requirements in "Medical device companies now need to prove to FDA they're protected against cyberattacks" (March 2023).
  - Mentioned in Adam Shostack's Security Engineering Roundup (September 2024).
  - Mentioned in Adam Shostack's AppSec Roundup (May 2024).

- *Curricular Use of Research:*

  - Work referenced in CYB 501 - Cybersecurity Graduate Seminar, University of Idaho (Fall 2024).
  - Work referenced in MIDI 5101 - Introduction to Medical Device Cybersecurity, University of Minnesota (Spring 2023).

PRESENTATIONS & INVITED TALKS

Industry Talks

- "Usable Security Research for Hospitals." Invited Speaker, **MassCyber's Healthcare Provider Cybersecurity Monthly Call**. April 2025.

- "Making Threat Modeling More Natural: Recommendations for Practitioners and Tool Developers." Invited Speaker, **ThreatModCon**. September 2024.

- "Protecting the innovation pipeline through secure and effective design, managing postmarket benefits and risks, and SBOMs." Invited Speaker with Naomi Schwartz (MedCrypt), **Stryker Product Security Summit**. November 2022.

- "Threat Modeling Workshop." Invited Speaker & Workshop Lead, **CyberMed Summit**. November 2022.

- "Medical Device Threat Modeling." Invited Speaker, **Healthcare Sector Coordinating Council**. January 2022.

Guest Lectures

- "It's a Beautiful Day to Secure Patients." Guest Lecture, UC San Diego Center for Healthcare Cybersecurity Lab Meeting. Jan 2026.

- "Human-in-the-Loop Security: Contextual Risk Perceptions and Resilience in Clinical Settings." Colloquium Speaker, **Tufts University**. April 2025.

- "There are rabbit holes I want to go down that I'm not allowed to go down." Guest Lecturer, **CIT 241: Inclusive cybersecurity and Privacy, Brown University**. November 2024.
- "This Must Be Secure: Barriers to Cyber-Secure in Critical Infrastructure." Guest Lecturer, **Emerging Scholars Program, Tufts University**. Fall 2025, Spring 2025, Fall 2024, Spring 2024, Fall 2023, Spring 2023, Fall 2022.
- "Threat Modeling Medical Devices." Guest Lecturer, **EE 193: Embedded Medical Devices, Tufts University**. Fall 2023.
- "Medical Device Security." Guest Lecturer, **CS 151: Privacy, Security, and Data, Tufts University**. Fall 2022.
- "Introduction to Threat Modeling." Guest Lecturer, **CS 151: Privacy, Security, and Data, Tufts University**. Fall 2022.
- "Ransomware & Hospitals: What cybersecurity incidents mean for patient care." Guest Lecturer, **Health Care Ethics, Georgetown University**. July 2022.

Conferences & Workshops

- Research Overview. UC San Diego Center for Healthcare Cybersecurity Academic Symposium 2025.
- Navigating the Patchwork: Investigating the Availability & Consistency of Security Advisories. SecDev 2025.
- An Investigation of Security & Privacy Concerns of Medical Professionals. ABSURD 2025.
- An Investigation of Security Expert Threat Modeling Practices for Medical Devices. RICSS 2024.
- An Investigation of Security Expert Threat Modeling Practices for Medical Devices. USENIX Security 2024.
- An Interactive Tool Supporting More Natural Flexible and Ad-Hoc Threat Modeling. WSIW 2024.
- An Investigation of Security Expert Threat Modeling Practices for Medical Devices. ABSURD 2024.

TEACHING EXPERIENCE

- **Teaching Assistant**, CS 114: Network Security, Tufts University. Spring 2024.
  - Delivered lecture on Wireless Security.
- **Teaching Assistant**, CS 151: Privacy, Security, and Data, Tufts University. Fall 2022.
  - Delivered lecture on SQL.

PROFESSIONAL SERVICE

Program Committee Member:
- Workshop on Security Information Workers (WSIW), Co-located with USENIX SOUPS. 2022, 2023, 2024.

Poster Review Committee Member:
- USENIX Symposium on Usable Privacy and Security (SOUPS). 2023, 2025.

Journal Reviewer:
- IEEE Transactions on Privacy. 2024.
- ACM Transactions on Software Engineering and Methodology (TOSEM). 2024.
- Computers & Security. 2022.

Student Volunteer & Sub-Reviews
- Symposium on Usable Privacy and Security, Program Committee. Student Volunteer.
- ACM Conference on Computer and Communications Security, 2021. Sub-Reviewer.
- Privacy Enhancing Technologies Symposium, 2021. Sub-Reviewer.
- Symposium on Usable Privacy and Security, 2022. Sub-Reviewer.
- IEEE Symposium on Security and Privacy, 2023 - 2024. Sub-Reviewer.
- USENIX Security Symposium, 2021 - 2024. Sub-Reviewer.