

Jonathan Segal

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linkedin.com/in/jonathannsegal github.com/jonathannsegal

Research Interests

I investigate how technology mediates shared cognition, communication, and coordination within and across specialized teams operating under pressure. My work examines these sociotechnical dynamics to design systems that enhance team resilience and performance in high-stakes environments.

Education

PhD, Information Science (2022 - 2028)

Cornell University, New York, New York, United States

Thesis: *Ubiquitous Interfaces to Empower Emergency Medical Teams*

Advisors: Taylor, A., Stevenson Won, A., Kalantari, S., Davis, A., St. George, J.

Study Abroad (2020)

University of New South Wales, Sydney, New South Wales, Australia

BS, Software Engineering (2018 - 2022)

Iowa State University, Ames, Iowa, United States

Advisors: Dorneich, M., Gilbert, S.

Publications

1. Segal, J., Nicolay, J., Ortega, F., Taylor, A.

Code Black: Desktop-Mediated Co-Design of AR-HMD Microinteractions for Emergency Department Teamwork

Proceedings of the ACM Symposium on Spatial User Interaction, SUI '26, ACM, 2026

2. Segal, J., Turman, M., Emrich, M., McLeod Daphnis, S., Rodriguez, S., Difede, J., Stevenson Won, A.

Practitioner-centered design: A case study of a human–computer interaction–clinician collaboration on the development of prototype virtual reality environments for the treatment of posttraumatic stress disorder and moral injury in healthcare workers

Journal of Medical Extended Reality, J. Med. XR, 2026

3. Segal, J.

Understanding Cross-Team Communication Through Shared Cognition in EMS to ED Handoffs

Proceedings of Interactive Health Doctoral Consortium (IH DC '26), IH DC '26, ACM, 2026

4. Segal, J., Nicolay, J., Cao, H., Kim, S., Tanjim, T., St. George, J., Ching, K., Ortega, F., Lee, H., Taylor, A.

Alignment Under Pressure: AR-HMD Support Tools for Action Teams

arXiv, arXiv, 2025

5. Segal, J., Hu, W., Fuoss, P., Ritter, F., Shrager, J.

A multi-scale cognitive interaction model of instrument operations at the Linac Coherent Light Source

Review of Scientific Instruments, Rev. Sci. Instrum., 2025

6. Shaveet, E., Segal, J., Mitchell, H., Choudhury, T.

Towards Gaze Tracking on Short Form Videos for Body Image Disturbance-Driven Condition Detection and Self-Monitoring

CHI Workshop, 2025

7. Jung, C., Collins, J., Gonzalez Penuela, R., Segal, J., Stevenson Won, A., Azenkot, S.

Accessible Nonverbal Cues to Support Conversations in VR for Blind and Low Vision People

Accessible Nonverbal Cues to Support Conversations in VR for Blind and Low Vision People, ASSETS, 2024

8. Segal, J., Rodriguez, S., Raghavan, A., Baez, H., Jung, C., Collins, J., Azenkot, S., Stevenson Won, A.

SocialCueSwitch: Towards Customizable Accessibility by Representing Social Cues in Multiple Senses

Extended Abstracts of the CHI Conference on Human Factors in Computing Systems, CHI EA, 2024

9. Yoo, Y., Segal, J., Hayes, A., Stevenson Won, A.

Just Look at Them! Encouraging Self-Reflection on Teacher Gaze Behavior through Data Visualizations in Virtual Reality

Proceedings of the ACM Conference on Human Factors in Computing Systems, CHI EA, 2024

* Authors contributed to this work equally

10. Francis, R., Segal, J., Farah, Y., Rozell, J., Dorneich, M., Gilbert, S.

MazeWorld: A Game-Based Environment Developed to Assess Teaming Behaviors

Proceedings of the Human Factors and Ergonomics Society Annual Meeting, HFES, 2022

11. Finseth, T., Dorneich, M., Keren, N., Franke, W., Vardeman, S., Segal, J., Deick, A., Cavanah, E., Thompson, K.

The effectiveness of adaptive training for stress inoculation in a simulated astronaut task

Proceedings of the Human Factors and Ergonomics Society Annual Meeting, HFES, 2021

Teaching

TECHIE 1121 — Ethical Vibe Coding

Co-Instructor, Summer 2026 at Cornell Tech · Instructors: Segal, J., Sandhaus, H.

INFO 5368 — Practical Applications in Machine Learning

Teaching Assistant, Spring 2025 at Cornell Tech · Instructor: Taylor, A.

INFO 5340/ CS 5650 — Virtual and Augmented Reality

Teaching Assistant, Fall 2024 at Cornell Tech · Instructor: Haraldsson, H.

INFO 4505/5505 — Computing and Global Development

Teaching Assistant, Spring 2024 at Cornell University · Instructor: Vashistha, A.

Posters

1. Taylor, A., Kandikattu, S., Segal, J., Stegner, L.

End-User Scenario Authoring for Autonomous Cross-Embodiment Robotic Training

NERC, Princeton, NJ, USA, October 3, 2026, 2026

2. Segal, J.

Toward Augmented Reality Guidance for High-Stakes Medical Care

vMed26, Los Angeles, CA, USA, March 26, 2026, 2026

3. Fieffer, S., Matsumuro, M., Newendorp, A., Sharma, S., Segal, J., Lovig, L., Abadi, G., Deal, A., Sabouni, H., Ranjbar, M., Lauharatanahirun, N., Dorneich, M., Stevenson Won, A., Gilbert, S.

MazeWorld: A Multiplayer 3D Research Testbed for Human Teaming, AI Agent Integration, and Multiple XR Disciplines

HCII, Gothenburg, Sweden, June 22--27, 2025, 2025

4. Segal, J., Pugh, C., Nicol, J., Ortega, F., Taylor, A.

Enhancing Emergency Room Response through Hands-Free Augmented Reality Assistance

Immersive Media in Medicine Symposium, Ithaca, NY, USA, December 12--13, 2024, 2024

5. Segal, J., Pugh, C., Nicol, J., Ortega, F., Taylor, A.

AR application design for Healthcare Teams

XR Access, New York, NY, USA, May 11--16, 2024, 2024

6. Segal, J., Rodriguez, S., Raghavan, A., Baez, H., Jung, C., Stevenson Won, A.

Guide to Distributing Tools for VR Accessibility Accommodations

XR Access, Cornell Tech, New York, NY, USA, September 6, 2023 (XR Access post), 2023

7. Segal, J., Jang, Y., Kim, H., Yao Wang, C., Jung, M., Fussell, S., Stevenson Won, A.

Improving collaboration in remote teams through tools to promote mutual understanding of nonverbal behavior

XR Retreat, New York, New York, United States, October 14, 2022, 2022

8. Jang, Y., Kim, H., Segal, J., Yao Wang, C., Hayes, A., Fussell, S., Stevenson Won, A.

A Training Tool to Help Teachers Recognize and Reduce Bias in Their Classroom Behaviors and

Increase Interpersonal Competence

XR Retreat, New York, New York, United States, October 14, 2022, 2022

9. Segal, J., Hu, W., Fuoss, P., Shrager, J.

Multi-Scale Cognitive Simulation can Enhance the Efficiency of LCLS Experimental Operations

LCLS, Palo Alto, CA, USA, May 11--16, 2022, 2022

10. Segal, J., Rozell, J., Francis, R., Farah, Y., Dorneich, M., Gilbert, S.

MazeWorld: A Game-Based Environment Developed to Assess Teaming Behaviors

ISU URS, Ames, IA, USA, April 29, 2022, 2022

11. Rozell, J., Cavanah, E., Segal, J., Dorneich, M., Gilbert, S.

Human-Agent Teams and MazeWorld

ISU URS, Ames, IA, USA, April 22, 2021, 2021

Service

Reviewer

ACM HRI

Jan 2025 – Jan 2025

Reviewer

ACM HRI

Jan 2024 – Jan 2024

Reviewer

ACM CHI

Jan 2024 – Jan 2024

Reviewer

IS Student-Applciant Reading Program (SARP)

Jan 2024 – Jan 2024

Reviewer

IS Student-Applciant Reading Program (SARP)

Jan 2025 – Jan 2025

IT Chair

XR Access

Jan 2024 – Jan 2024

Student Volunteer

AWE

Jan 2024 – Jan 2024

Student Volunteer

AWE

Jan 2025 – Jan 2025

Student Volunteer

Immersive Media in Medicine Symposium

Jan 2024 – Jan 2024

Student Volunteer

SIGGRAPH

Jan 2024 – Jan 2024

Organizing Committee

Information Science Research Retreat

Jan 2023 – Jan 2023

K-12 Volunteering

Cornell Tech - PS 32 Field Trip

Jan 2025 – Jan 2025

K-12 Volunteering

Cornell Tech - HS Programming Contest

Jan 2025 – Jan 2025

K-12 Volunteering

Cornell Tech - WiCC HS Workshop

Jan 2024 – Jan 2024

K-12 Volunteering

Cornell Tech - PS/IS 78Q Field Trip

Jan 2024 – Jan 2024

Student Leader

IS PhD Visit Days (Cornell Tech)

Jan 2024 – Jan 2024

Volunteer Mentor

WiCC HS Programming Workshop

Jan 2025 – Jan 2025

AirLab Ambassador

Queens Tech Fair

Jan 2025 – Jan 2025

Judge

State Science and Technology Fair of Iowa

Jan 2022 – Jan 2022

Talks

Keeping Teams Aligned Under Pressure — IE 5010 Seminar Series, Industrial and Manufacturing Systems Engineering, Iowa State University (September 2026)

Toward Augmented Reality Guidance for High-Stakes Medical Care — CRA-WP Lightning Talk (March 2026)

Toward Augmented Reality Guidance for High-Stakes Medical Care — Robotics Lab Webinar (February 27, 2026)

Toward Augmented Reality Guidance for High-Stakes Medical Care — Colorado State University Computer Science Department Colloquium (October 2025)

Toward Augmented Reality Guidance for High-Stakes Medical Care — XR Monthly, XR Collaboratory, Cornell Tech (September 2025)

XR Live Scanning — Life History Lab (2024)

Introduction to Communication — Guest Lecturer at Cornell University (October 2023)

Awards

Best Paper (Honorable Mention): Code Black: Desktop-Mediated Co-Design of AR-HMD Microinteractions for Emergency Department Teamwork

ACM Symposium on Spatial User Interaction (SUI 2026)

Co-authors: Nicolay, J., Ortega, F., Taylor, A.

Award: <https://doi.org/10.1145/3822518.3830045>

Finalist, Cornell Graduate School Three Minute Thesis (3MT): When Seconds Count: Inter-Team Coordination in Emergency Care

Cornell University Graduate School

Award: <https://gradschool.cornell.edu/career-and-professional-development/three-minute-thesis/3mt-2026-2/>

CIS Dream Grant (2024)

\$1,000.00

Cornell Ann S. Bowers College of Computing and Information Science

Industry

Research Intern

SLAC (GISMo)

Jun 2022 – Aug 2022

Palo Alto, CA

Summer Analyst

BlackRock

May 2021 – Aug 2021

New York, NY

SE Intern

Dwolla

May 2020 – Aug 2020

Des Moines, IA

SE Intern

Corteva Agriscience

May 2019 – Aug 2019

Johnston, IA

Organizations

ACM SIGCHI

Association for Computing Machinery

Student Member · ID: 8267670 · Jun 2025

IEEE VR

Institute of Electrical and Electronics Engineers

AMXRA

American Medical Extended Reality Association

Jul 2024

Leadership

Outreach Chair

Future Civilizations Conference

Apr 2026 – Apr 2026

Ithaca, New York, United States

Research Track Chair

Augmented World Expo

Dec 2025 – Jun 2026

Co-President

PhD's at Cornell Tech (PACT)

Feb 2026 – May 2026

New York, New York, United States

Co-Strategic Officer

PhD's at Cornell Tech (PACT)

Mar 2025 – Jan 2026

New York, New York, United States

Treasurer

Information Science Graduate Student Association

Aug 2022 – May 2024

Ithaca, New York, United States

Student Engagement Co-chair

Iowa State Engineers' Week

Aug 2021 – May 2022

Ames, Iowa, United States

Chair Member

Iowa State Software Engineering Student Council

Aug 2021 – May 2022

Ames, Iowa, United States

Co-Founder & President

Hackathon Club

Sep 2019 – Jan 2020

Ames, Iowa, United States

Artifacts

Fokos

A clean timer app for iOS. Features countdowns, haptics, and optional calendar logging.

Study Scheduler

Coordinate scheduling for multi participant user studies.

MazeWorld (v3.0.0 · 9/19/2024)

A multiplayer 3D research testbed for human teaming studies. Used in [IEEE VR 2025].

Multi-Scale Cognitive Interaction Model of Instrument Operations at the Linac Coherent Light Source (v1.0.0 · 10/3/2023)

Cognitive interaction model used to simulate instrument operations at SLAC.

Unity Tutorial (v1.0.0 · 10/19/2023)

Guide/resources for Unity VR research.

Social Sensory Sub (v1.0.0 · 10/3/2023)

Unity package for representing nonverbal social cues. Released for [CHI EA 2024].

GridAI: Iowa State Capstone Project (v1.0.0 · 5/1/2022)

Power Grid Analytics.

Map Tab (v0.3.0 · 7/1/2020)

Chrome extension showing cool places in new tabs.

CryptoBonds (v1.0.0 · 2/26/2019)

Blockchain stable coin app using Hyperledger Sawtooth.

Spring Home (1/25/2019)

HTML5 platformer. Built for Global Game Jam 2019

Personal Projects

Fokos

A clean timer app for iOS. Features countdowns, haptics, and optional calendar logging.

Study Scheduler

Coordinate scheduling for multi participant user studies.

MazeWorld (v3.0.0 · 9/19/2024)

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Spring Home (1/25/2019)

HTML5 platformer. Built for Global Game Jam 2019

Mentoring

Juliette Dashe — Undergraduate Summer Intern

Jul 6 - Sep 9, 2026

Fahmin Rahman — Undergraduate Summer Intern

Jun 26 - Aug 7, 2026

Sunishka Sil — Master Student

AR Development

2025 - May 2026

Sirui Wang — Master Student

AR Development

2025 - May 2026

Weicong Hong — Master Student

ER In Lab Study

2025 - May 2026

Michael Twersky — Master Student

ER In Lab Study

2025 - May 2026

Ludovic Morin — Master Student

GenFlows Procedure Generation

2025 - May 2026

Certifications

Emergency Medical Technician (EMT) — Basic

NYS Bureau of EMS, New York, USA

ID: 524169 · Expires: Jun 2027