# AMY W. HAYS

East Texas A&M University, Computer Science and Information Systems – RELLIS ACB2 210 – Bryan, TX 77843
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## APPOINTMENTS

**East Texas A&M University**                                           2022-Present
    Department of Computer Science and Information Systems
    Commerce, TX and RELLIS Academic Alliance, Bryan, TX
    Non-Tenure Track Faculty - Instructor

## EDUCATION

**PhD**   Texas A&M University, Computer Science                       2023-2027
    Dissertation: AI Privacy, Cognitive Security, and Cybersecurity
    Advisor: Dr. Nitesh Saxena
    GPA: 4.0

    East Texas A&M University,                                         2021-2023
    Educational Psychology
    Dissertation: Cognitive Science and Augmented Reality
    Advisor: Dr. Shulan Lu
    GPA: 3.94

**MS**    East Texas A&M University,                                   2019-2021
    Computer Science
    Thesis: Methods of Neural Network Analysis to Identify Weapons in Augmented
          Reality.
    Advisor: Dr. Derek Harter
    GPA: 4.0

    Cornell University, Plant Physiology                               1995-1997
    (Written and successfully defended, not submitted)
    MPS Thesis: Measuring Plant Growth under Red and Far-Red Light using Linear
          Voltage Differential Transducers (LVDTs) and an IBM PC.
    Advisor: Dr. Daniel J. Tennessen

**BS**    University of California, Davis, Double Major                1990-1995
    International Agricultural Development
    And Botany

## RESEARCH EXPERIENCE

**Texas A&M University,** College Station, TX                          2023 to Present
**SPIES Lab**, Dr. Nitesh Saxena
- Researching human cognitive abilities to decipher between human composed music and generative AI composed music.
- Defining and operationalizing information density in complex heterogeneous environments.

- Studying AI Privacy in emerging AI Assistant Tools.
- Investigating methods to exploit attacker's cognitive vulnerabilities, including confirmation bias and cognitive load.
- Examining the impact of cognitive load and fatigue on users' ability to detect phishing.

**East Texas A&M University,** Commerce, TX                2020 to 2021
**Formerly known as Texas A&M University-Commerce,**
**Presidential Graduate Assistant Researcher**, Dr. Sang Suh
- Article title: "Impact of US State Public Health Interventions on Mental Health during the COVID-19 Pandemic."
- Research and assisted writing a Research Experience for Undergraduates Grant for the NSF

**Cornell University,** Ithaca, NY                1995 to 1997
**MPS Thesis**, Advisor: Dr. Daniel J. Tennessen
- Researched, wrote, and defended master's thesis.
- Built and apparatus to measure plant growth down to the μm using Linear Voltage Differential Transducers, a data acquisition board, and an IBM PC.
- Collected and converted the analog signals to digital signals to be converted to usable data to be analyzed.

**University of California**, Davis, CA                1994 to 1995
**Undergraduate Student Researcher**, Dr. Alan B Bennett
- DNA Isolations, PCR Reactions, Gel Electrophoresis, and RFLP Mapping.
- Assisted Ph.D. students with their tomato genetics research thesis projects.

**University of California**, Davis, CA                1993 to 1994
**Undergraduate Student Researcher**, C.M. Rick Tomato Genetics Resource Center
- Cultivated and cross-pollinated tomato plants.
- Recorded and organized tomato plant varieties in the lab database.

**Hunt-Wesson, Inc**, Davis, CA                1992 to 1995
**Agriculture Research Lab Computer Specialist**, Dr. Thomas C. Garvey
- Biotech Project Management Internship.
- Designed and wrote programs for all Hunt-Wesson's Ag Research labs to analyze tomato processing data.

## PUBLICATIONS

A. Plager, E. Olexa, D. Gardner, B. Torres, **A. Hays** and A. Farraj, "A Study of SCADA System Vulnerabilities and Man-in-the-Middle Threats in Substation Operations," *2025 IEEE Texas Power and Energy Conference (TPEC)*, College Station, TX, USA, 2025, pp. 1-5, https://doi.org/10.1109/TPEC63981.2025.10907190

## CONFERENCE PRESENTATIONS & POSTERS

Sarah Rodriquez, Taylor Johnson, **Amy Hays**, Sang Suh, (2025), *Year 1-2: Investigating a Computing S-STEM Program and Computing Identity for Students with Financial Need [Poster].* 2025 American Society for Engineering Education Annual Meeting, Montreal, Canada.

Justin Barry, Jessie Hoepfl, Rais Momin, **Amy Hays**, Abdallah Farraj, (2024*), Securing Substation SCADA Systems*. Poster. Global Cyber Research Institute Summit.

Avram Plager, Brooke Torres, Danelle Gardner, Erwin Olexa, **Amy Hays**, Abdallah Farraj, (2024), *Vulnerabilities in SCADA Systems for Substations and Smart Circuit Breakers.* Poster. Global Cyber Research Institute Summit and 8th Annual Texas A&M Conference on Energy.

Josue Loya, Addison Gault, Travis Webber, Dontavien Johnson, **Amy Hays**, Abdallah Farraj, (2024), *Utilizing Blockchain in Securing the Advanced Metering Infrastructure of Smart Grids*. Poster. 8th Annual Texas A&M Conference on Energy.

**Amy W. Hays,** Sang Suh, (2021), *Linear Regression Analysis of the Impact of COVID-19 Pandemic Health Interventions on Mental Health in the United States*. Presentation. 2021 International Conference on Future Intelligent Computing, Daegu University.

## GRANTS & SYNERGISTIC ACTIVITIES

**Cross-Border Threat Screening and Supply Chain Defense (CBTS) Cybersecurity Summer Research Institute.** *Faculty Mentor.* U.S. Department of Homeland Security under Grant Award Number 18STCBT00001. (2024)

**Air Force Office of Scientific Research (AFOSR) Multi University Research Initiative (MURI)**, *Doctoral Researcher* for Nitesh Saxena, Co-Principal Investigator for Multi-institution Consortia with the University of Colorado, Boulder and the Air Force Academy (AFA) under Award Number FA9550-23-1-0453. (2023 to 2025)

**TEES Annual Research Conference (TARC) Project Award** - "Zero Trust Access Control Using Post-Quantum Cryptography". Co-Principal Investigator. $2,500.00. FY23 – FY24

**National Science Foundation (NSF) S-STEM Computer Science as a Career Scholarship (CSAC) Program,** *Program Manager* with Dr. Sang Suh, Principal Investigator for Multi-institution Consortia with Collin College, Dallas College, Iowa State, and Virginia Tech, $4.98M Awarded, August 2022- August 2027, Grant No.2221189.

*The Human Factor and Cognitive Security: The Mistakes We Can Make That Can Put the System at Risk*. **Strategic Holistic Intrusion Defense in Power Systems (SHIELD) 3rd Annual Student Workshop**. NSF Award No. 2220347. Center for Infrastructure Renewal (CIR), Texas A&M University System, Bryan, TX, USA. May 12, 2025.

*SPIES Lab and Cognitive Security Presentation*. **Tackling Cybercrimes: A Key to Modern Trade**, Pakistan International Exchange and Leadership Program (IELP). Global Cyber Research Institute, Texas A&M University. College Station, TX, USA. February 12, 2025.

*SPIES Lab and Cognitive Security*. **Cyber Barn Raising Workshop**. Cyber Defense and Response. Center for Infrastructure Renewal (CIR). Texas A&M University System. Bryan, TX, USA. December 9, 2024.

*Cognitive Security*. **Cognitive Psychology Class** at RELLIS Academic Alliance, Texas A&M University, Kingsville. Bryan, TX, USA. November 19, 2024.

*Cybersecurity in Health Panel.* Panelist. **Global Cyber Research Institute Summit**. Texas A&M University, College Station, TX, USA. September 20, 2024.

*Cognitive Security and Risk Mitigation: A Theoretical Framework, Supporting Neurophysiological Studies, and Development of Modeling and Intervention Techniques in Sparse and Dense Information Environments*. MURI Team. **NATO Cognitive Security Workgroup.** August 28, 2024.

## TEACHING EXPERIENCE

### Instructor of Record

**RELLIS Academic Alliance**, Bryan, TX                    August 2023 to Present
Instructor, Department of Computer Science, Texas A&M University-Commerce
- Lecture, grade, and design course materials for:
  - CSCI 233 Application Program Development
  - CSCI 303 Technical Communications for Computing Professionals
  - CSCI 389 Web Programming
  - CSCI 423 Enterprise Architecture
  - CSCI 434 Introduction to Computer Networks
- The average class size is 20 Students.

**East Texas A&M University**, Commerce TX                    January 2022 to Present
Formerly known as Texas A&M University-Commerce,
Instructor, Department of Computer Science
- Lecture, grade, and design course materials for:

- o CSCI 351 Foundations of Information Security
- o CSCI 352 Digital Forensics
- o CSCI 359 Systems Analysis and Design
- o CSCI 423 Enterprise Architecture
- o CSCI 434 Introduction to Computer Networks
- o COSC 2336 Data Structures and Algorithms
- o COSC 1436 Introduction to Computer Science and Programming
- o COSC 1437 Programming Fundamentals II
- The average class size is 35 Students.

## Teaching Assistant

**East Texas A&M University**, Commerce TX                January 2020 to Aug 2020
Formerly known as Texas A&M University-Commerce,
Graduate Teaching Assistant, Department of Computer Science
- Supervise Network Computer Lab
- Grade assignments and update Online class grading system for:
  - o CSCI 430 Operating Systems
  - o CSCI 352 Intro to Digital Forensics
  - o CSCI 440 Application Software Project Development
  - o CSCI 515 Fundamentals of Programming C/C++
  - o COSC 1436 Introduction to Computer Science and Programming
  - o COSC 1437 Programming Fundamentals II
- The average class size is 35 Students.
- Assist students with their computer science programming questions for Python and C++, and Assembly Language.

**Cornell University**, Ithaca, NY                August 1995 to May 1997
Graduate Teaching Assistant, Plant Biology
- Introduction to Plant Biology
  - o Conducted undergraduate laboratory courses averaging 25 students per semester.
  - o Graded assignments.
  - o Assisted students.

## Courses Developed

**East Texas A&M University,** Commerce, TX
**Formerly known as Texas A&M University-Commerce,**
**Department of Computer Science** - Commerce, TX
*CSCI 423 Enterprise Architecture* – This course introduces the students to enterprise organization and architecture. The students learn its definition, importance, organizational designs, various job skillsets, and team dynamics. They study how software development projects stay agile and resilient with the ever-changing business needs and within the architecture of large enterprise businesses. Student Learning Outcomes:

- The students should be able to define the organizational designs, various job skillsets, and team dynamics involved in enterprise architecture.
- The students should be able to summarize various systems process roles, such as risk management, change management, business continuity, operations, and disaster recovery, and DevSecOps.
- The students should be able to identify various skill sets needed for different job opportunities in the various system process roles.
- The students should be able to analyze methods and strategies for obtaining job experience and staying resilient and relevant for working in computer science in large enterprise environments.

## MENTORING AND GRADUATE COMMITTEES

- Jeremy Tran, Undergraduate Researcher, Texas A&M University
- Aldo Avila Escobedo, Undergraduate Researcher, Texas A&M University
- High School Researcher
- Dr. Ahmet Kurt, Assistant Professor, RELLIS & East Texas A&M University
- Yau Ka Cheung, M.S., Instructor, RELLIS & East Texas A&M University
- MD. Imanul Hug, Ph.D. Student, Texas A&M University
- Mahbub Alam, Ph.D. Student, Texas A&M University
- Sonjoy Kumar Paul, Ph.D. Student, Texas A&M University
- Adheera Regonda, Master's Student, East Texas A&M University
  Master's Thesis: *Knowledge Graph for Vulnerability Management*.
- Shannon Shepherd, Master's Student, East Texas A&M University
- Kathleen Hays, Master's Student, East Texas A&M University
- Chyler Jones, Undergraduate Researcher, RELLIS & East Texas A&M University
- Jesus Mendoza, Undergraduate Researcher, RELLIS & East Texas A&M University
- 4 CBTS Undergraduate Researchers, RELLIS, Texas A&M University – Texarkana
- 1 CBTS Undergraduate Researcher, RELLIS, East Texas A&M University
- 6 CBTS Undergraduate Researchers, Texas A&M University
- 30 Undergraduate NSF S-STEM CSAC Scholars, RELLIS & East Texas A&M University
- 2 Undergraduate, Atypical Ambassadors, East Texas A&M University

## PROFESSIONAL EXPERIENCE

**Telecom Capacity & Performance Planner**                    2007 – 2015
Charles Schwab & Co., Plano, TX.

**Coppell Print Facility - IT Field Support Analyst**          2004 – 2007
Charles Schwab & Co., Coppell, TX.

**National Service Desk - Helpdesk Support Analyst**          1999 – 2004
Charles Schwab & CO., San Francisco, CA

**Desktop Field Support Analyst**                                       1998 – 1999
North American Mortgage Company, Santa Rosa, CA

**Lab Tech**                                                                        1997
La Crema Winery, Windsor, CA

**Agriculture Research Lab Computer Specialist**              1992 – 1995
Hunt-Wesson, Inc, Davis, CA

## INTERNSHIPS

**Biotechnology Management Internship**                        1992 – 1993
Hunt-Wesson, Inc., Davis, CA.

**United States Congressional Internship**                             1990
Congressman Douglas Bosco, California's 1st District
U.S. House of Representatives, Washington, D.C.

## PROFESSIONAL TRAINING

**PSY 697 – Grant Development and Administration**              2025
East Texas A&M University

**GRAD Aggies Professional Development Certificate**          2025
Foundations Certificate, Texas A&M University, College Station, TX

**CIRTL Associate Certificate**                                            2024
**An Introduction to Evidence-Based Undergraduate Teaching**
Texas A&M University, College Station, TX

**An Introduction to Evidence-Based Undergraduate STEM Teaching**   2023
CIRTL Network MOOC, Texas A&M University

**Exploratory Data Analysis**                                             2014
Coursera, Johns Hopkins University

**Getting and Cleaning Data**                                            2014
Coursera, Johns Hopkins University

**R Programming**                                                             2014
Coursera, Johns Hopkins University

**Data Scientist's Toolbox**                                              2014
Coursera, Johns Hopkins University

## PROFESSIONAL AFFILIATIONS

**Association for Computing Machinery (ACM)** 2019-Present

**IEEE** 2020-Present

**IEEE-Eta Kappa Nu (HKN)** 2025
Electrical and Computer Engineering Honor Society,
Gamma Mu Chapter at Texas A&M University

**Phi Kappa Phi Honor Society** 2025
Eta Chapter at Texas A&M University

## HONORS AND AWARDS

**Alumni Ambassador** 2025
Computer Science & Information Systems
East Texas A&M University, Commerce, TX

**Student Government Senator of the Year Award** 2021
East Texas A&M University, Commerce, TX

**SGA Rising to the Challenge Award** 2021
Conference on Student Government Associations (COSGA)

**Change Maker Service Award Nominee** 2021
East Texas A&M University, Commerce, TX

**Distinguished Graduate Student Award Nominee** 2021
East Texas A&M University, Commerce, TX

**Phi Kappa Phi Honor Society** 2020-2023
East Texas A&M University, Commerce, TX.

**Distinction in Professional Development, Gold-Level** 2020
East Texas A&M University, Commerce, TX

**Global Learner** 2020
East Texas A&M University, Commerce, TX

**Employee of the Month Award** 2001, 2002, 2003, 2004
National Service Desk, Charles Schwab, San Francisco, CA

**The Charles Hess Community Service Award** 1995
University Of California, Davis
Award given at graduation by the College of Agriculture and Environmental Sciences.

## LANGUAGES

**English**: Native Language

**Spanish**: Novice Listener/Speaker