

EDUCATION

Doctor of Philosophy (PhD) **Clemson University, SC, USA** **Jan 2020 – Dec 2024 (Expected)**

- Major: Computer Science, GPA: 4.00
- Advised by Dr. Bart Knijnenburg

Master of Science (MS) **Arab Academy for Science, Technology and Maritime Transport, Egypt** **Aug 2016 – Oct 2018**

- Major: Computer Engineering, GPA: 4.00
- Thesis: " A New Hybrid Model for Movement Control of Upper Limb Prosthesis in Brain Computer Interface Systems".
- Advised by Dr. Sherin Youssef

Bachelor of Science (BS) **Arab Academy for Science, Technology and Maritime Transport, Egypt** **Sept 2011 – July 2016**

- Major: Computer Engineering, GPA: 4.00

FIELD OF INTERESTS

- Human Computer Interaction, Privacy, Human-AI teams, Machine learning, Deep learning, Biomedical Engineering, Brain Computer Interface, Digital Signal Processing

WORK EXPERIENCE

Graduate Research Assistant **Clemson University, Clemson, SC** **Jan 2022 – Present**

- Joined and actively engaged in research at the Humans and Technology Laboratory (HATLab)
- Participated in qualitative and quantitative research studies.
- Designed user interfaces and prototypes using Figma and developed web and mobile apps with React Native.
- Produced short videos using Adobe Premiere Pro and generated AI chatbots with Landbot and Juji
- Analyzed data using R-language and MPLUS
- Authored and co-authored papers in the area of usable privacy and education
- Involved in preparing grant proposals

Intern **Applied Research Associates & TRACE Research Group** **May 2023 - Aug 2023**

- Led the redesign of the Navy's Human Resources Decision Support Tool.
- Collaborated on UI/UX design using Figma and developed features with React Native.

Graduate Teaching Assistant **Clemson University, Clemson, SC** **Jan 2021 - Dec 2021**

- Involved in co-teaching and student assessment for courses on Discrete Structures in Computing and Introduction to C Programming Language.
- Prepared instructional materials, graded assignments and quizzes, conducted weekly office hours, and provided assistance to students.

Teaching Assistant **Arab Academy for Science, Technology and Maritime Transport** **Sep 2016 - Dec 2020**

- Assisted professors in various academic tasks, including the development of educational materials, teaching, preparation of assignments, quizzes, and exams, and grading of these assessments.
- Conducted office hours, providing guidance and support to students, and contributed to academic advising.
- Involved in teaching and student assistance for subjects such as Artificial Intelligence, Data Structures, Data Acquisition, and Operating Systems.
- Served as a member of the Schedule and Registration Committees, responsible for organizing semester course schedules for professors and students and addressing registration-related issues.
- Headed the accreditation team for the Accreditation Board for Engineering and Technology (ABET) at the university

Intern **Dell EMC2** **Aug 2015 - Sep 2015**

- Completed Information Storage and Management (ISM) program and certified as Information Storage Associate Version 2 (EMCISA)

Intern **International Business Machines IBM** **Aug 2014 - Sep 2014**

- Completed AIX Basics and AIX System Administration programs
- Shadowed technical support engineers to help enhance the availability of business' IT environments and help optimize complex IT frameworks

PEER-REVIEWED PUBLICATIONS

Journal Papers

- Six, SG., Byrne, KA, **Aly, H.**, & Harris, MW. "The effect of mental health app customization on depressive symptoms in college students: randomized controlled trial." JMIR Mental Health (2022)
- **Aly, H.**, & Youssef, S. "Bio-signal based motion control system using deep learning models: a deep learning approach for motion classification using EEG and EMG signal fusion." Journal of Ambient Intelligence and Humanized Computing (2021)

Conference Proceedings

- **Aly, H.**, Liu, Y., Anaraky, RG., Khan, S., Namara, M., Byrne, KA., & Knijnenburg, B. "Tailoring Digital Privacy Education Interventions for Older Adults: A Comparative Study on Modality Preferences and Effectiveness." Proceedings on Privacy Enhancing Technologies PETS (2024)
- Gupta, A., **Aly, H.**, & Knijnenburg, B. "Giving Social Media Post Authors More Control over the Translation of Their Text-based Posts" The 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW). (2024)
- Liu, Y., Anaraky, RG., **Aly, H.**, & Byrne, KA. "The Effect of Privacy Fatigue on Privacy Decision-Making Behavior" Proceedings of the Human Factors and Ergonomics Society Annual Meeting (HFES). (2023)
- Six, S., **Aly, H.**, & Byrne, KA. "Investigating the Effect of Personalization in a Mental Health App on Depressive Symptoms" Proceedings of the Human Factors and Ergonomics Society Annual Meeting (HFES). (2022)
- **Aly, H.**, & Youssef, S. "Hybrid brain computer interface for movement control of upper limb prostheses" International Conference on Biomedical Engineering and Applications. (2018)

Research Under Review

- **Aly, H.** "Enhancing Digital Privacy Education for Older Adults" under review for Doctoral Consortium at ACM Conference on Intelligent User Interfaces ACM IUI. (2024)
- **Aly, H.**, Byrne, KA., & Knijnenburg, B. "Perceived Trustworthiness of Human vs. AI Instructors in Digital Privacy Education for Older Adults" under review for Poster at ACM Conference on Intelligent User Interfaces ACM IUI. (2024)

PEER-REVIEW ACTIVITIES

- ACM Conference on Computer-Supported Cooperative Work and Social Computing CSCW (2023)
- Associate Chair for the ACM Conference on Computer-Supported Cooperative Work and Social Computing, Posters Cycle (2023)
- Program Committee Member of the Symposium on Human Computing and Social Computing (HCSC) under the 46th IEEE COMPSAC Conference (2022)

CONFERENCES AND WORKSHOPS

- Attended the Privacy Interventions and Education (PIE) workshop and presented a paper titled "Exploring the Role of Trust Transfer in the Adoption of AI Assistants for Digital Privacy Education among Older Adults" at the ACM CHI Conference on Human Factors in Computing Systems (Apr 2023)
- Attended the 7th Workshop on Inclusive Privacy and Security (WIPS) and presented a paper titled "Digital Privacy Education Interventions for Rural and Urban Older Adults" at the Symposium on Usable Privacy and Security SOUPS (Aug 2022)

- Presented a research paper titled "Hybrid Brain Computer Interface for Movement Control of Upper Limb Prostheses" at the International Conference on Biomedical Engineering and Applications, Funchal, Portugal, (July 2018)

ACHIEVEMENTS AND AWARDS

- Clemson University Human Factors Institute Director's Award. (2023)
- IEEE-Eta Kappa Nu (IEEE-HKN)
 - Vice President (April 2019 – Dec 2020)
 - Web Correspondent (April 2018 – April 2019)
- Best Student Paper in the International Conference on Biomedical Engineering and Applications (July 2018)
- Shield of Excellence from H.E Minister of Defense and Military Production in First International Undergraduate Research Conference of the Military Technical College, (Aug 2016)
- Received a full-tuition Scholarship m,at the Arab Academy for Science, Technology and Maritime Transport (Sept 2011 - July 2016)
- Achieved recognition on the Engineering Dean's List of Honor at Arab Academy for Science, Technology and Maritime Transport, in recognition of exceptional academic performance Sept 2011 - July 2016)

CURRENT ACADEMIC PROJECTS

- **The Adoption of AI Assistants for Digital Privacy Education** (Aug 2023 – Present)
 - Investigate the adoption of AI assistants to improve individuals' knowledge of digital privacy policies and practices
 - Design effective digital privacy education tools that adopts AI assistants to promote transparency and improve people's knowledge of ways to protect their digital privacy
- **Designing digital privacy education interventions for rural and urban older adults** (Jan 2022 – Present)
 - Identify digital privacy education needs of rural and urban-dwelling older adults and design effective digital privacy education interventions that promote transparency in these populations
 - Funded by Meta People's Expectations and Experiences with Digital Privacy Research Award
- **Reverse stereotyping study** (Aug 2021 – Present)
 - Examine whether exposure to positive exemplars from underrepresented racial/ethnic groups can mitigate the existing interconnected racial and gender biases. Exposure to counter stereotypical exemplars is implemented using a motivational speech application
 - Partially funded by Clemson University Human Factors Institute director's award
- **Social Media Post Translation: User's Preferences of Control** (Aug 2021– Present)
 - Examine the impact of increasing the transparency and control for social media users in regard to the translation of their posts, with the goal of determining if such measures can enhance trust in the accuracy and reliability of automated machine translation
- **The Effect of Privacy Fatigue on Privacy Decision-Making Behavior** (Jan 23 - Present)
 - Examine the effect of privacy fatigue that results from the constant demands to manage privacy settings and make extensive decisions about whether to disclose personal data, as well as the impact on privacy decision-making behavior in the digital environment.

PREVIOUS ACADEMIC PROJECTS

- **Promoting Human Interpretation and Interaction to Mitigate Bias in Artificial Intelligence Assisted Decision Aids** (Jan 2023 – May2023)
 - Design and develop multiple variations of intelligent user-interfaces for decision aid dashboards that utilize user interaction and interpretation to mitigate Artificial Intelligence (AI) decision making bias
 - Funded by Office of Naval Research ONR grant.
- **AirHeart study: "Investigating the Effect of Personalization in a Mental Health App on Depressive Symptoms"** (Jan 2022 – May 2022)
 - Investigate the effect of app feature personalization, including avatar customization and naming, on depressive symptoms in mental health apps.
 - Mobile Health Applications for End Users award in the Design Competition in conjunction with the 2023 International Symposium on Human Factors and Ergonomics in Health Care.
- **M.Sc. Thesis: "A New Hybrid Model for Movement Control of Upper Limb Prostheses in Brain Computer Interface Systems"** (Oct 2017 – Jul 2018)
 - Proposed a Hybrid Brain Computer Interface BCI system that integrates EEG and EMG signal processing with machine learning models to efficiently improve classification accuracy and increase the control performance of different upper limb movements for above elbow amputees.

Proposed a new deep learning model using Convolution Neural Networks (CNN) to investigate the efficiency of deep learning in hybrid BCI systems to classify hand and wrist movements.

- **A Smart Control of Upper Limb Prosthetic Arms** (April 2018 – May 2018)
 - A robotic arm used as upper limb prosthesis to help upper limb amputees to restore their arm functions. The robotic arm was tested on hand, wrist and elbow movements.
- **B.SC. Thesis: PHARMAROID: A Mobile Enabled Robot Pharmacist** (Oct 2015 – Jul 2016)
 - Developed a smart pharmacy system with a mobile app that allows users to order medicines. The system includes a server to process requests and a robotic pharmacist designed to identify, pick, and dispense the correct medications from a smart storage system
 - Best Student Poster Paper in the 2016, 33rd National Radio Science Conference.

GRADUATE COURSEWORK

- Research Methods for Human-Centered Computing HCC, Measurement and Evaluation in HCC Systems, Deep Learning, Data Mining, Artificial Intelligence, Data Compression and Image Processing.

PROFESSIONAL SKILLS

- **Programming Language:** C, C++, C#, Python, Java & Matlab
- **User interface UI Design:** Figma
- **Quantitative Data Analysis:** R-Language
- **Web Programming:** JavaScript, Node.js, HTML & PHP
- **Database:** MYSQL
- **Mobile application:** Android & React Native
- **Image processing, Signal processing and pattern recognition:** MATLAB, Python