

# Mariam Hassib

Researcher in Human-Computer Interaction

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## PROFILE

I am a Human-Computer Interaction postdoctoral researcher currently working at the intersection of **HCI & Usable Security** for analyzing human behavior in security-critical tasks. During my PhD I worked on designing and developing novel communication experiences which sense users' emotions and cognitive states for personal or group communication in various domains such as **work/learning, VR, or automotive**. My research approach comprises both **qualitative and quantitative research methods**. I have led multidisciplinary teams of 3-8 people on 30+ publications (H-Index 17, [Google Scholar](#)). I previously worked as a **UX researcher** in a reviews platform startup (Cairo, Egypt) where I introduced UXR and lean UX models. I worked as a **UX consultant** for multiple large technology players in Cairo, did my bachelor thesis in **Daimler AG** (Ulm), and interned in **Sony** (Stuttgart).

## EXPERIENCE

Since 09/18

### Post-doctoral Researcher

**Usable Security & Privacy (CODE), Bundeswehr University, Munich**

- Research on social engineering, analyzing human behavior using environmental/ physiological sensors to create secure applications
- Material preparation & presentation of Usable Security course, coaching and supervision of 10+ bachelor and master students

04/14 - 08/18

### HCI Researcher - Media Informatics, LMU Munich

- Research on physiological sensing, affective computing, enhancing communication technologies
- Supervision of 20+ bachelor and master thesis students
- Teaching several lectures and seminars on Advanced Media Informatics, Physiological Sensing and HCI.

03/13 - 12/13

### UX Researcher - Trustious (Reviews Platform), Cairo, Egypt

- Contributing to the first online reviews platform in Egypt covering categories such as: Books, Restaurants, Education, and Home.
- Conducting focus groups/interviews, usability testing, card sorting
- Designing wireframes, lo-fi prototypes and user flows across features such as: sign-up and on-boarding, search, reviewing, category/item pages.
- Integrating Lean startup methods.

12/10 - 02/13

### UX Researcher - Arability (UX Consultancy), Cairo, Egypt

- Working with various customers (telecom, hotels, schools) to enhance mobile/web applications by applying Heuristic evaluations & user testing, wireframing, personas, and reporting on findings to stakeholders.

05/11 - 10/11

### Image Processing Intern- Sony STC, Stuttgart,

- Implementation and comparison of image processing algorithms to extract and text recognition of subtitles in videos using MatLab

03/09 - 08/09

### UX Design Intern, Infotainment Systems, Daimler AG, Ulm

- Research on the challenges of integrating Arabic in Automotive UIs
- Design and implementation of Arabic UI for phonebook, and radio display

## EDUCATION

04/14 - 08/18

### PhD in Human Computer Interaction LMU Munich, Media Informatics

**Dissertation:** Designing Communication Technologies based on Physiological Sensing  
**Focus:** HCI, Affective computing, physiological sensing, applied machine learning.

10/10 - 11/12

### MSc. Computer HW/SW Engineering INFOTECH, University of Stuttgart

**Thesis:** Mental Task Classification using Single Electrode Brain-Computer Interfaces  
**Focus:** SW Engineering, HCI  
**Grade:** 1.4

09/05 - 09/10

### Bachelor of Digital Media Engineering German University in Cairo— Egypt

**Thesis:** Integration of Arabic Language in GUI of Cars, Daimler AG (Ulm)  
**Focus:** Computer Science, Media Informatics  
**Grade:** 1.04 (High Honors, top 5%)

## SKILLS

### UX Research Methods

Designing valid lab/remote/field studies, conducting focus groups and participatory design workshops, conducting interviews, designing surveys, experience sampling experiments, thematic analysis, personas, user journeys, wireframing, Lo-Fi prototypes, usability testing

### Data & Statistical Analysis

SPSS, Applied Machine Learning

### Physiological Sensing

Electroencephalography, Electromyography, Eye tracking, Heart Rate Sensing

### Development and Tools

HTML/CSS, JS, Android (basic knowledge), Atlas.TI, Balsamiq, Adobe XD, Figma, Miro

### Languages

English (fluent), German (fluent), Arabic (mother tongue), French (elementary)

## SELECTED PROJECTS

For a complete list of academic projects please check [Google Scholar](#)

### HeartChat: Heart Rate Augmented Mobile Messaging

Role: Lead Researcher (Team of 4)

We designed, and evaluated an Android **mobile chat application**, HeartChat, which integrates heart rate as a cue to increase awareness and empathy. Through a **background review** and a **focus group**, we identified design dimensions important for heart rate augmented chats. We created three concepts showing heart rate per message, in real-time, or sending it explicitly. We tested our system in a two week **in-the-wild study** with 14 participants (7 pairs). **Interviews and questionnaires** showed that HeartChat supports empathy between people, in particular close friends and partners. **For more details please find the full paper [here](#).**

### In-Car Emotion Recognition and Feedback using Physiological Sensors and Ambient Light

Role: Lead Researcher (team of 3)

We developed a novel concept for detecting and influencing driver emotions using physiological sensing for classification and ambient light for feedback. We evaluated our concept with 12 drivers on a **driving simulator** with a fully equipped car. We use three ambient lighting conditions (no light, blue light, and orange light). Using a subject-dependent **random forests machine learning classifier** with 40 features we achieve an average accuracy of 78.9% for classifying valence and 68.7% for arousal. **Driving performance was enhanced** in conditions where ambient lighting was introduced. Both blue and orange lights helped drivers to improve lane keeping. We conducted **1:1 interviews** with drivers to understand their feedback. **For more information, please find the full paper [here](#).**

### EngageMeter: Audience Feedback Sensing with EEG

Role: Lead Researcher (team of 7)

Obtaining information about audience engagement in presentations is a valuable asset for presenters. We designed an **online survey** targeting professional presenters to gather information about **current presentation pain points** and potential **presentation feedback visualizations**. Using the outcome of the survey, we designed EngageMeter – a system that allows **fine-grained information on audience engagement** to be obtained implicitly from multiple brain-computer interfaces and presented to presenters for **real time and post-hoc access**. We conducted an **in-the-wild evaluation** during an HCI conference with 3 presenters and followed up by **in-depth interviews** after the conference. We found that EngageMeter provides value to presenters (a) in real-time, since it allows reacting to current engagement scores by changing tone or adding pauses, and (b) post-hoc, since presenters can adjust their slides and embed extra elements. **For more information, please find the full paper [here](#).**

### Nudging Mechanisms for Mobile Phone Camera Access

Role: Lead Researcher (Team of 3)

Mobile applications that are granted permission to access the device's camera can access it at any time without showing the user. This lack of transparency raises privacy concerns. Through a **focus group and co-design workshop**, we identified 3 approaches for nudging the user that the camera is being accessed: notification bar, frame, and camera preview. We evaluated our designs in a **lab study** (N= 15) which showed that using frame nudges is the least interrupting, although it was less understandable than the camera feed and notifications. For more information, please find the paper [here](#).

## SCHOLARSHIPS & AWARDS

04/14 - 03/18

### DAAD PhD Scholarship (GERLS)

Chosen among 70 scholars from all of Egypt to complete my PhD in Germany

01/14 - 03/14

### DAAD German Language Scholarship

For finishing the B2 Goethe German language Certificate in Göttingen

06/11

### Google Anita Borg EMEA Finalist

Chosen among 75 scholars & finalists from the whole EMEA region to attend Google Scholars Retreat in Zürich

03/09 - 08/09

### GUC Bachelor Thesis Scholarship

For being in the top 3 students in my major, sponsoring a 6 month stay in Ulm

## TEACHING

Throughout my undergraduate and doctoral studies I have been a **tutor** for multiple courses: Introduction to Computer Science, Data Structures and Algorithms, supervised. During my doctoral and postdoctoral work, I **supervised** more than 30 Bachelor/Master thesis, **created material** for, and taught multiple **seminars** and **lectures** including: Usable Security, Physiological Sensing in HCI, Advanced Seminar on Media Informatics.

## RESEARCH SERVICE

Throughout my academic career I have served as **Program Committee Member** in conferences such as MUM, HAI, Augmented Humans, Mensch und Computer, Automotive UI. I was a student volunteer in Mensch und Computer 2015, and IoT 2016.

Since 2016, I have been a **reviewer** for CHI, UbiComp/IMWUT, INTERACT, MobileHCI, Mensch und Computer, CSCW, NordiCHI, IDC, ToCHI, and other HCI venues. I was an **editor** in the journal of Information Technology 2021.