RAWAN ALHARBI | Curriculum Vitae

🌐 www.rawanalharbi.com ✉ rawan.alharbi@northwestern.edu

Research Interests

The main goal of my research is to enable a sustainable future for wearable systems. I work in the intersection of **human-computer interaction**, **systems**, and **machine learning**, exploring how we can build intelligent, efficient, and responsible wearable systems that can sustain their efficacy as they integrate into everyday life.

Education

June 2022	**Ph.D. in Computer Science, Northwestern University** *Dissertation Title: Re-imagining Visual Wearable Systems* Advisor: Nabil Alshurafa
2016	**M.S. in Computer Science, Northwestern University** *Thesis Title: Opportunistic tangible programming by demonstration for physical components* Advisor: Micheal Horn
2011	**B.S. in Computer Science, Prince Sultan University**

Awards and Achievements

2021	**The Peter and Adrienne Barris Outstanding Teaching Award**
2020	**Rising Stars in EECS**
2019	**ACM IMWUT Special Recognition for Outstanding Reviews**
2019	**ACM SIGCHI Student Travel Award**
2018	**ACM UbiComp Travel Award**
2017	**Best Poster Award at 2017 Obesity Week (eHealth/mHealth Section)**
2016	**Best Paper Award at IEEE BODYNET**
2016	**IEEE PerCom NSF Travel Award**

Publications

— Peer-Reviewed Journals and Conference Publications

[C06] **ActiSight: wearer foreground extraction using a practical RGB-Thermal wearable**
Rawan Alharbi, Sougata Sen, Ada Ng, Nabil Alshurafa, Josiah Hester
IEEE Conference on Pervasive Computing and Communications (PerCom'22)

[C05] **Heatsight: wearable low-power omni thermal sensing**
Rawan Alharbi, Chunlin Feng, Sougata Sen, Jayalakshmi Jain, Josiah Hester, Nabil Alshurafa
ACM Conference on Pervasive and Ubiquitous Computing (Ubicomp/ISWC'21)
Published in ISWC

[C04] **To mask or not to mask? Balancing privacy with visual confirmation utility in activity-oriented wearable cameras**
Rawan Alharbi, Mariam Tolba, Lucia C Petito, Josiah Hester, Nabil Alshurafa
ACM Conference on Pervasive and Ubiquitous Computing (UbiComp'19)
Published in PACM IMWUT

[C03] **Is more always better? Discovering incentivized mHealth intervention engagement related to health behavior trends**
Nabil Alshurafa, Jayalakshmi Jain, Rawan Alharbi, Gleb Iakovlev, Bonnie Spring, Angela Pfammatter
ACM Conference on Pervasive and Ubiquitous Computing (UbiComp'19)
Published in PACM IMWUT

[C02] **I can't be myself: Effects of wearable cameras on the capture of authentic behavior in the wild**
Rawan Alharbi, Tammy Stump, Nilofar Vafaie, Angela Pfammatter, Bonnie Spring, Nabil Alshurafa
ACM Conference on Pervasive and Ubiquitous Computing (UbiComp'18)
Published in PACM IMWUT

[C01] ✳ **Food watch: Detecting and characterizing eating episodes through feeding gestures**
Shibo Zhang, Rawan Alharbi, William Stogin, Mohamad Pourhomayun, Bonnie Spring, Nabil Alshurafa
EAI International Conference on Body Area Networks (BodyNets'16)
Best Paper Award

— Publications Under Review or Preparation

[R02] **Energy-Efficient Hand Dense Prediction Using Wearable RGBT Camera**
Rawan Alharbi, Soroush Shahi, Aggelos Katsaggelos, Josiah Hester, Nabil Alshurafa

[R01] **SmokeMon: Unobtrusive Wearable for Measuring Smoking Topography**
Rawan Alharbi, Lingfeng Li, Stefany Cruz, Sougata Sen, Bonnie Spring, Aggelos Katsaggelos, Josiah Hester, Nabil Alshurafa

— Peer-Reviewed Workshop Papers and Extended Abstracts

[W05] **"I am not an engineer": Understanding how clinicians design & alter assistive technology**
Rahaf Alharbi, Ada Ng, Rawan Alharbi, Josiah Hester
ACM CHI Conference on Human Factors in Computing Systems - Extended Abstract (EA CHI'20)

[W04] **Investigating barriers and facilitators to wearable adherence in fine-grained eating detection**
Rawan Alharbi, Nilofar Vafaie, Kitty Liu, Kevin Moran, Gwendolyn Ledford, Angela Pfammatter, Bonnie Spring, and Nabil Alshurafa.
IEEE Conference on Pervasive Computing and Communications - Workshop (PerCom'17 Workshop)

[W03] **Intuito: Opportunistic tangible programming by demonstration for physical components**
Rawan Alharbi, Nabil Alshurafa, Michael Horn
ACM CHI Conference on Human Factors in Computing Systems - Extended Abstract (EA CHI'17)

[W02] **Willsense: Adherence barriers for passive sensing systems that track eating behavior**
Rawan Alharbi, Angela Pfammatter, Bonnie Spring, Nabil Alshurafa
ACM CHI Conference on Human Factors in Computing Systems - Extended Abstract (EA CHI'17)

[W01]   **When generalized eating detection machine learning models fail in the field**
Shibo Zhang, <u>Rawan Alharbi</u>, Matthew Nicholson, Nabil Alshurafa
ACM Conference on Pervasive and Ubiquitous Computing - Extended Abstract (EA UbiComp'17)

— Peer-Reviewed Extended Abstracts in Medicine

[M04]   **Measuring smoking topography in natural settings using non-contact passive wearable sensors**
<u>Rawan Alharbi</u>, Bonnie Spring, Nabil Alshurafa
Annals Of Behavioral Medicine (SBM'20)

[M03]   **Detecting real time episodic overeating for just in time interventions**
Nabil Alshurafa, <u>Rawan Alharbi</u>, Angela F Pfammatter, Bonnie Spring
Annals Of Behavioral Medicine (SBM'18)

[M02]   **From sensing to theory: Implications of capturing naturally occurring behaviors in the wild**
Angela F Pfammatter, <u>Rawan Alharbi</u>, Nabil Alshurafa, Bonnie Spring
Annals Of Behavioral Medicine (SBM'18)

[M01]   **From lab to field: Eating detection machine learning models, privacy, stigma and user-comfort of wearables**
Nabil Alshurafa, <u>Rawan Alharbi</u>
Annals Of Behavioral Medicine (SBM'17)

Teaching Experience

— At Northwestern University

2022   **Computing Everywhere Workshop: Detecting Human Activities Using Wearable Sensors**
Co-Instructor and Workshop Designer

2021   **COMP_SCI 397/497: Wireless, and Mobile Health (mHealth)**
Instructor and Course Designer, Winter Quarter 2021

2020   **BDSD Workshop: Analyzing Human Behavior and Lifestyle Using Wearable Sensors Workshop**
Instructor and Workshop Designer

2019   **Computing Everywhere Workshop: Building Android Apps**
Co-Instructor and Workshop Designer

Other Work Experience

2011 -   **Ericsson, Saudi Arabia**
2013   *Platform Service Engineer*

Selected Talks

— Conference Talks

2021   **Heatsight: Wearable low-power omni thermal sensing**
UbiComp — ISWC

| 2019 | **To mask or not to mask? Balancing privacy with visual confirmation utility in activity-oriented wearable cameras** |
| | *UbiComp — IMWUT* |

| 2018 | **I can't be myself: Effects of wearable cameras on the capture of authentic behavior in the wild** |
| | *UbiComp — IMWUT* |

2017 ✳	**Will Participants Wear Passive Sensing Devices Long Enough to Study Eating Behavior?**
	Obesity week — eHealth/mHealth Section
	Best Poster Award

Services

— Organizing

| 2020 | **NSF-Funded Workshop on Technology for Automated Capture of Diet** |
| | *Student Volunteer* |

| 2019–2020 | **Northwestern Graduate Women in Computing (GWiC)** |
| | *Co-Director* |

| 2018 | **UbiComp Conference** |
| | *Student Volunteer* |

— Reviewing

2019 – ✳	**ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)**
	2-3 reviews per year
	2 x Special Recognitions for Outstanding Reviews

| 2019– | **ACM Conference on Human Factors in Computing Systems (CHI)** |
| | *1-2 reviews per year* |

| 2019 | **IEEE EMBS International Conference on Biomedical & Health Informatics (BHI)** |

References

Nabil Alshurafa
Assistant Professor of Preventive Medicine and (by courtesy) Computer Science
Northwestern University
nabil@northwestern.edu

Josiah Hester
Assistant Professor of Electrical and Computer Engineering, computer science, and (by courtesy) Preventive Medicine
Northwestern University
josiah@northwestern.edu

Micheal Horn
Associate Professor of Computer Science and Education and Social Policy
Northwestern University
michael-horn@northwestern.edu

Aggelos K. Katsaggelos
Joseph Cummings Professor of Electrical and Computer Engineering and (by courtesy) Computer Science
Northwestern University
a-katsaggelos@northwestern.edu