Mina Khan

http://khanmina.github.io/
+1 857-280-0613
minakhan01@gmail.com

EDUCATION

Massachusetts Institute of Technology (MIT) Media Lab 2018-2022
Doctor of Philosophy in Media Arts and Sciences **GPA: 5.0/5.0**
Thesis: Context-aware and Closed-loop Behavior Change using Artificial Intelligence

Massachusetts Institute of Technology (MIT) Media Lab 2016-2018
Master of Science in Media Arts and Sciences **GPA: 5.0/5.0**
Thesis: "Wonderland: Constructionist Science Learning in Mixed Reality"; Courses: How to Make (almost) Anything; How to Design almost Anything: Tools for well-being; Creative Learning; Human-Machine Symbiosis; Microfabricated Devices

Mount Holyoke College 2011-2015
B.A. in Mathematics, Physics & Computer Science **(Magna Cum Laude)** **GPA: 4.0/4.0**
Courses: Machine Learning; Artifical Intelligence; Real Analysis; Complex Analysis; Quantum Mechanics (I, II); Algorithms; Differential Equations; Theory of Computation; Electromagnetic Theory; Fluid Mechanics; Electronics

EXPERIENCE

MIT Media Lab - Research Assistant, Fluid Interfaces group — Jun '16 - Jun '22
Researching technologies to support human health & cognition. Projects: Mathland and PAL

MIT Media Lab - Teaching Assistant — Jan - Apr '19
Course: Cognitive Enhancement

IDEO - Summer Research Fellow — Jun - Aug '17
Developed a Mixed Reality application for constructionist physics learning in the real world

Google - Software Engineer, Project Aura: Google Glass & Beyond — May '15 - May '16
Created contextually- and emotionally-aware personalized applications for wearable devices

Udacity - Course Manager — Jun '14 - Mar '15
Courses: Machine Learning; Web Programming; Android Development; Python Programming

MIT Computer Science and Artificial Intelligence Lab - Researcher, Robot Locomotion Lab — Jun - Aug '14
Implemented Gröbner bases algorithms to efficiently solve robot locomotion problems

Scanning Probe Microscopy Lab - Undergraduate Research Student, Mount Holyoke College — Jan '12 - Jun '14
Designed nanostructures to exponentially increase storage capacity of magnetic memory devices

Swarm Robotics Lab - Undergraduate Researcher/Developer, Mount Holyoke College — Jan '13 - Dec '14
Implemented multi-robot formations using rigidity graph theory for swarm robots

National Corporation for Atmospheric Research - Research Intern, High Altitude Laboratory — Jun - Aug '13
Used satellite data to parameterize auroral energy and joule heating in upper atmospheric models

Mount Holyoke College - Teaching Assistant — Jan '11 - Dec '14
Linear Algebra; Electromagnetism; Data Structures; Discrete Math; Quantum Mechanics; Real Analysis

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PUBLICATIONS

Privacy-preserving Audio, Visual, and Physiological Contexts for Wearable Behavior Change Support
HEALTHI Workshop, 2021 ACM Intelligent User Interfaces Conference (Under review)
Khan, Mina, Glenn Fernandes, and Pattie Maes.

Tracking Diverse Feelings and Activities Encourages Self-guided Holistic Behavior Change
Extended Abstracts, 2021 CHI Conference on Human Factors in Computing Systems. ACM, 2021 (Under review)
Khan, Mina, and Pattie Maes.

Changing Computer-Usage Behaviors: What Users Want, Use, and Experience
Extended Abstracts, 2021 CHI Conference on Human Factors in Computing Systems. ACM, 2021 (Under review)
Khan, Mina, Kathryn Wantlin, Zeel Patel, Elena Glassman, and Pattie Maes.

Personalized & Privacy-preserving Egocentric Visual Context Detection using On-device Deep Learning
2021 AH : Augmented Human International Conference. ACM, 2021 (Under review) **Khan, Mina,** et al.

Users want Diverse, Multiple, and Personalized Behavior Change Support: Need-finding Survey
International Conference on Persuasive Technology, Springer, 2021 (Under review) **Khan, Mina,** et al.

Improving Context-aware Habit-support Interventions using Egocentric Visual Contexts
International Conference on Persuasive Technology, Springer, 2021 (Under review)
Khan, Mina, Glenn Fernandes, Mayank Manuja, Akash Vaish, Pattie Maes, and Agnis Stribe.

PAL: A Wearable Platform for Real-time, Personalized, & Context-Aware Health & Cognition Support
arXiv preprint arXiv:1905.01352 (2019) **Khan, Mina,** G. Fernandes, U. Sarawgi, P. Rampey, and P. Maes.

Mathland: Constructionist Mathematical Learning in the Real World Using Immersive Mixed Reality
International Conference on Immersive Learning. Springer, Cham, 2018. **Khan, Mina,** F. Trujano, and P. Maes.

Mathland: Playful Mathematical Learning in Mixed Reality
Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems. ACM, 2018.
Khan, Mina, et al.

ARPiano: Efficient Music Learning Using Augmented Reality (Best Paper Award)
International Conference on Innovative Technologies and Learning. Springer, Cham, 2018.
Trujano, Fernando, **Mina Khan**, and Pattie Maes.

Towards Personalized Medicine: The Evolution of Imperceptible Healthcare Technologies
Foresight 2018. C Dagdeviren, **Khan Mina,** Sadraei A., et al.

TagAlong: Informal Learning from a Remote Companion with Mobile Perspective Sharing
Cognition and Exploratory Learning in Digital Age (CELDA) 2015. Greenwald, S. W., **Khan, M**., Vazquez, C., & Maes, P.

Enabling Human Micro-Presence Through Small-Screen Head-up Display Devices
Extended Abstracts of the 2015 CHI Conference on Human Factors in Computing Systems. ACM, 2015.
Greenwald, S. W., **Khan, M**., & Maes, P.

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PUBLICATIONS

A Multi-level Single-bit Data Storage Device. *Journal of Applied Physics 115.17 (2014): 17D511.*
Bickel, Jessica E., **Mina Khan,** and Katherine E. Aidala

TALKS & EXHIBITS

Bees Of Science Exhibit 2019 (MIT Media Lab): LOVE: a flexible microfabricated breathing sensor tattoo

TEDxBeaconStreet 2017: Play, Power, & Passion: Falling in love with math

Ars Electronica 2017: Tangible AI: Physical Engagement with a social chatbot (Microsoft Zo)

AWARDS

FELLOWSHIPS & SCHOLARSHIPS

MIT Media Lab Learning Fellow (Full-year academic funding) 2018-2019

LEGO Learning Fellow (Full-year academic funding) 2017-2018

Google Anita Borg Scholar 2015

Sarah Williston Scholar (Mount Holyoke College) 2014

ACADEMIC HONORS

Magna Cum Laude (Mount Holyoke College) 2015

Sarah Williston Prize for **Academic Excellence** (Mount Holyoke College) 2013, 2014, 2015

Rogers Rusk Memorial **Prize in Physics** (Mount Holyoke College) 2015

Fennema & Strahman **Prize in Computer Science** (Mount Holyoke College) 2015

Mildred L Sanderson Prize for **Excellence in Math** (Mount Holyoke College) 2012

Bennet Prize for **Excellence in Physics** (Mount Holyoke College) 2012

Highest Achievement in A Level Mathematics (Cambridge International Examinations) 2011

Highest Achievement in A Level Further Math (Cambridge International Examinations) 2011

Highest Achievement in A Level Economics (Cambridge International Examinations) 2011

COMPETITIONS

Microsoft Design Expo Winner Holobits: Interactive storytelling in Mixed Reality 2017

Google Code Jam Winner 2014, 2015

SKILLS

Software: Machine Learning (Tensorflow), Mixed Reality (Unity), Android and Web Developlement, Python.

Hardware: Microfabrication (cleanroom), Circuit design (Eagle), CNC milling, Laser cutting, & 3D design

Design: Adobe Creative Suite (Illustrator, Photoshop, InDesign, Premiere)