

Majeed Kazemitabaar

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WORK & RESEARCH EXPERIENCES

Sep 2020 – Present

University of Toronto
Graduate Research Assistant
Teacher Assistant

Researching on novel programming environments and tools to ease the transition from block-based programming environments to text-based environments for novice users.

Sep 2017 – Sep 2020

Metrix
Senior Software Engineer

Worked on the design and development of an industry-level marketing analytics tool. Developed big-data analysis and storage pipelines, user segmentation pipelines and query builders, data aggregation pipelines, and finally, performed usability testing sessions.

May 2017 – Aug 2017

Microsoft Research, Redmond
Research Intern

Extended [MS MakeCode](#) with a programming by demonstration pipeline that allows children to incorporate machine-learning algorithms into their programs as an alternative method to writing code.

Jan 2017 - April 2017

University of California, Berkeley
Visiting Student Researcher

Collaborated on building and evaluating a new embedded systems development environment with improved debugging capabilities by illuminating the boundary between embedded code and circuits

University of Maryland, College Park
Graduate Research Assistant
Teacher Assistant

Aug 2014 – May 2017

As a member of the Human-Computer Interaction Lab and the MakeabilityLab I researched on and developed learning technologies and creativity support tools for children, particularly, tools that enable young children to write computer programming codes.

EDUCATION

Sep 2020 – Present

University of Toronto
Area:
PhD Thesis:

Ph.D. in Computer Science

Human-Computer Interaction, Computer Science Education; **Advisor: Professor Tovi Grossman**
Easing the Transition from Blocks-to-Text using Novel Programming Environments

Aug 2014 – Aug 2017

University of Maryland, College Park
Area:
MS Thesis:

M.Sc. in Computer Science

Human-Computer Interaction, Learning Technologies; **Advisor: Professor Jon Froehlich**
MakerWear: A Tangible Construction Kit for Young Children to Create Interactive Wearables

- Lead graduate researcher on MakerWear: designing and investigating a wearable electronic construction kit to support young children in the creative design, play, and customization of e-textiles and wearables. Supervised by **Prof. Jon Froehlich**.

- Member of the *Kidsteam* as a co-researcher in an intergenerational design team brainstorming, designing, and building technologies for children with children. Supervised by **Prof. Allison Druin**.

Sep 2011 - Jun 2014

Sharif University of Technology
Area:
BS Thesis:

B.Sc. in Computer Engineering

Human-Computer Interaction, Robotics, Hardware Design
A Markerless Augmented Reality System using Transparent Displays for Character-Based Games

- Prototyped a new camera-less augmented reality system using transparent OLED displays.
- Designed a character-based gaming platform to promote physical and social activities in children.

PUBLICATIONS

IDC'21
In Submission

Kazemitabaar, M., Chyhir, V., Chen, Y., Weintrop, D., Grossman, T. (2021) *"Blocks-to-Text: An Intermediary Programming Environment for Novices to Transition from Scratch to Python"* In Proceedings of the Conference on Interaction Design and Children.

IDC'21
In Submission

Kazemitabaar, M., Deline, R., Grossman, T. (2021) *"LearnerBlocks: A Machine Learning Toolbox for Young Makers of Digital-Physical Constructions"* In Proceedings of the Conference on Interaction Design and Children.

UIST'17
Proceedings

McGrath, W., Warner, J., Drew, D., **Kazemitabaar, M.**, Karchemsky, M., Mellis, D., and Hartmann, B. (2017) *"Bifrost: Visualizing and Checking Behavior of Embedded Systems across Hardware and Software"* In Proceedings of 30th Annual ACM Symposium on User Interface Software and Technology

- ICER'17** Workshop **Kazemitabaar, M.**, and DeLine, R. (2017) *"GestureBlocks: A Gesture Recognition Toolkit for Children"* Presented at the 2017 Conference on International Computing Education Research: Workshop on Research on Learning about Machine Learning
- CHI'17** Proceedings **Kazemitabaar, M.**, McPeak, J., Jiao, A., He, L., Outing, T., and Froehlich, J. (2017) *"MakerWear: A Tangible, Approach to Wearable Creation for Children"* In Proceedings of the 2017 Conference on Human Factors in Computing Systems. **Best Paper Winner** (top 1%)
- CHI'16** Extended Abstracts **Kazemitabaar, M.**, He, L., Wang, K., Aloimonous, C., Cheng T. and Froehlich, J., (2016) *"ReWear: Early Explorations of a Modular Wearable Construction Kit for Young Children"* In Proceedings of the 2016 Conference Extended Abstracts on Human Factors in Computing Systems. **Best Late-Breaking Work Paper** (top 1%)
- IDC'15** Demo **Kazemitabaar, M.**, Norooz, L., Guha, ML., and Froehlich, J. (2015) *"MakerShoe: Towards an E-Textile Construction Kit to Support Creativity, Playful Making, and Self-Expression"* In Proceedings of the Conference on Interaction Design and Children.
- SAC'14** Proceedings Boghrati, R., Heydarnoori, A. and **Kazemitabaar, M.** (2014) *"Activities performed by programmers while using framework examples as a guide"* In Proceedings of the 2014 Symposium on Applied Computing.

AWARDS AND HONORS

- May 2017 **CHI2017 Best Paper Award** for *MakerWear*
- Sep 2016 Selected as one of the four **"Inventors in our Midst"** at the 2016 Silver Spring Maker Faire
- May 2016 **CHI2016 Best Late-Breaking Work Award** for *ReWear*
- May 2015 **Top Maker Award** at the *Tangible Interactive Computing Course*

PROFESSIONAL SERVICES

- Reviewer** ACM Tangible and Embodied Interactions (TEI), 2018
ACM Interaction Design and Children (IDC), 2018
ACM Human Factors in Computing Systems (CHI), 2017
- Student Volunteer** ACM Human Factors in Computing Systems (CHI), 2016

SELECTED TALKS

- Design Field Notes** **Kazemitabaar, M.**, (2017) *"MakerWear: A Tangible Approach to Interactive Wearable Creation For Children"* Jacobs Institute of Design, Berkeley, CA, March 7th, 2017
- Tehnica: Tech + Design** **Kazemitabaar, M.**, Behnezhad, S., Saha, M., He, L., (2016) *"Interaction Design for a Purpose"* 2nd All-Women Hackathon, College Park, MD, Nov 3rd, 2016
- Maker Faire Silver Spring** **Kazemitabaar, M.**, (2016) *"MakerWear: A Tangible, Modular Approach for Children to Create Interactive Wearables"* 4th Silver Spring Maker Faire, Silver Spring, MD, Sep 25th, 2016
- HCIL Symposium** Froehlich, J. and **Kazemitabaar, M.**, (2016) *"MakerWear: Early Explorations of Wearable Construction Kits for Children"* 33rd Annual HCIL Symposium, College Park, MD, May 26th, 2016
- HCIL Symposium** **Kazemitabaar, M.** (2015) *"MakerShoe: Towards an E-Textile Construction Kit to Support Creativity, Playful Making, and Self-Expression"* 32nd Annual HCIL Symposium, College Park, MD, May 28th, 2015

MENTORSHIP

- Undergraduate Advisees**
- Summer 2021*
- Viktor Chyhir, Computer Science, University of Toronto (Class of 2022)
- Summer 2016*
- Jason McPeak, Computer Engineering, University of Maryland (Class of 2017)
 - Alex Jiao, Electrical and Computer Engineering, University of Maryland (Class of 2019)
- Summer 2015*
- Tony Cheng, Computer Science, University of Maryland (Class of 2018)
 - Katie Wang, Computer Science, University of Maryland (Class of 2018)

TEACHING EXPERIENCE

- Teaching Assistant** *Fall 2021*
Mark Kazakevich
- **CSC309 - Web Programming (JavaScript, React)**
- Teaching Assistant** *Spring 2016 & Spring 2015*
Dr. Pedram Sadeghian
- **Intro to Web Programming (HTML/CSS/JavaScript)**, 60 students (Spring'16), 70 students (Spring'15)
- Fall 2015*
Inst. Larry Herman
- **Intro to Computer Systems (C Programming)**, 67 students

Dr. Vibha Sazawal, Dr. Alireza Ajdari *Fall 2014*
• **Human-Computer Interaction**, 60 students (Fall 2014), 50 students (Spring 2013)

Dr. Shohreh Kasaei *Fall 2013*
• **3D Computer Vision**, 15 students

Dr. Hamidreza Pourreza *Spring 2011 & Fall 2010*
• **Electric Circuits**, 58 students (Spring 2011), 81 students (Fall 2010)

Instructor *Summer 2011 & Fall 2010*
• **Programming AVR microcontrollers**, 26 students (Summer 2011), 14 students (Fall 2010)

SKILLS

Physical Computing

Hardware Programming + CAD
Computational Art + Design
Fabrication

Arduino • AVR • ARM • DSP • FPGA (VHDL & Verilog) • Eagle PCB Design
Rhino • Grasshopper • Processing
3D Printing • CNC • Laser Cutting • Vinyl Cutting

Software Engineering

Languages
Frameworks & Libraries
Tools & Databases

Kotlin • Python • C++ • C# • Java • JavaScript • TypeScript
Spring • React • React Native • Django
Docker • Kafka • Elasticsearch • Cassandra • Redis • PostgreSQL • MongoDB

Creative Authoring

Graphic + Video Design

Photoshop • Illustrator • Premiere Pro • After Effects