

# Marwa AlAlawi

Riffa, Kingdom of Bahrain  
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## EDUCATION

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### Massachusetts Institute of Technology (MIT)

Cambridge, MA

- Bachelor of Science in Mechanical Engineering.
- MIT Fabrication Lab '19
- Additional coursework in EECS.
- Concentration in Advanced Modern Japanese.

GPA: 4.8/5.0

May, 2020

### Phillips Academy Andover

Andover, MA

- Cum Laude Honor Society.
- American High School Diploma with Accelerated AP Physics, Math, Chemistry.

GPA: 5.7/6.0

June, 2016

### Khawla Secondary Girls School

Manama, Bahrain

- Ranked First on Bahrain.
- Bahrain Tawjihiya Degree with Concentration in math and physics.

GPA: 99.9%

June, 2014

## RESEARCH EXPERIENCE

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### Device Realization Group (MIT, Mechanical Engineering)

Cambridge, MA

Advisors: Brian Anthony, Yuwei Li

Sep 2019- May 2020

- Developed a virtual reality environment at MIT Nano's Immersion Lab, with wearable sensors for human physiological measurements, to investigate user presence in VR.
- Presented research as part of MIT Nano Seminar Series
- Published Undergraduate thesis titled "Design of a Virtual Environment for Physiological and Subjective Monitoring of User Presence in VR"

### Personal Robots Group (MIT, Media Lab)

Cambridge, MA

Advisors: Cynthia Breazeal, Safinah Ali

Feb 2019- Sep 2020

- Developed an android application with Kotlin for child-robot text-to-speech communication with Jibo the robot.

### MIT Biomimetics Lab (MIT, Mechanical Engineering)

Cambridge, MA

Advisor: Meng Yee (Michael) Chuah

June- Sept 2017

- Aided with fabrication of stress field footpad sensor for overall fabrication process documentation.

## TEACHING EXPERIENCE

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### Teaching Assistant for Product Engineering Processes (MIT 2.009)

Remote

- Lead creative for virtual theme reveal concept, costume design, and 2D animator.
- Animation media release: <https://2s009.com/animatedTheme>
- Costume design media release: <https://2s009.com/kindKillian>

Aug 2020- Present

**Undergraduate Teaching Assistant for Toy Product Design (MIT 2.00b)** Cambridge, MA

- Mentored a team of six MIT undergraduate students on toy design ideation and fabrication. Feb- May 2020
- Guided 30+ undergraduate students with running shop machines and electronics through recitations and in-class lab sessions.

**MIT International Science and Technology Initiative** Amman, Jordan

- Team leader, instructor, and curriculum developer for monthlong STEM teaching in Jordanian high schools (Amman Academy, Jubilee School). Jan- Feb 2020
- Established a high school STEM curriculum focusing on product development and design, with hands on workshops in Python, Arduino, UI/UX Design, and Unity.

**Teaching Assistant at MehtA+ Machine Learning Bootcamp** Online

- Mentored 8 students with machine learning projects for peer-reviewed academic paper and poster session. Projects include: Latin Translation with Machine Learning, Handwriting Recognition with Convolutional Neural Networks on Writings of George Washington: <https://mehtaplustutoring.com/mlpast/> May- Aug 2020
- Developed and taught online Python recitation for 40 students.

**MIT Maker-space Mentor (Makerlodge, Makerworkshop)** Cambridge, MA

- Trained MIT Freshmen on shop machines (laser cutter, 3D printer, bandsaw, drill press, hand tools) through a two-day hands on project. Sep 2017- March 2020
- Supervised and assisted MIT undergraduate and graduate students through several shop machines (laser cutter, 3D printer, vinyl cutter, desktop CNC mill for PCB fabrication)

**Undergraduate Teaching Assistant for Physics: Mechanics (MIT 8.01)** Cambridge, MA

- Directed and assisted more than 27 students with mechanics concepts during in-class problem solving. Sep- Dec 2017
- Graded more than 27 student problem sets on weekly basis.

## WORK EXPERIENCE

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**Universal Studios Japan** Osaka, Japan

- Postponed till Japan border reopening.
- Future work includes design of Virtual Reality experience for in-park attraction.

**GREE** Tokyo, Japan

- Developed an educational virtual reality game for Japan's Agency (JAXA) National Space and GREE's "Arienai" Kids Workshop using Unity and HTC VIVE. June- August 2018
- Game Media Release (Let's Experience the Size of the Moon!): <https://corp.gree.net/jp/ja/news/press/2019/0218-02.html>

## PUBLICATIONS

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- M. AlAlawi “Design of a Virtual Environment for Physiological and Subjective Monitoring of User Presence in VR” B.Sc. thesis, Massachusetts Institute of Technology, May 2020.

## PATENTS

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- H. Castillo, Q. Ai, M. AlAlawi, B. Bennington, N. Das, K. Gavin, D. Goetz, V. Hunter, S. Ihns, C. Jordan, S. Le, G. Li, F. McKellar, L. Milde, V. Muldoon, R. Tse, K. Zheng. “Box Separating System” (**IN PREPARATION**).

## PRESENTATIONS

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- Presenting author of “*Design of a Virtual Environment for Physiological and Subjective Monitoring of User Presence in VR*” (cited above) at MIT Nano Seminar Series, Remote, April 2020.
- M. AlAlawi, “*KanKan: Kanji to Katakana Physical OCR Translator*”, Invited Speaker at University of Bahrain, Riffa, Bahrain, Jan 2019.
- M. AlAlawi, “*Effect of Hair Dye Color on Hair Fracture Properties*”, MIT Measurement and Instrumentation Poster Session, Cambridge, MA, Dec 2018.

## UNPUBLISHED WORK

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- M. AlAlawi, “*Effect of Hair Dye Color on Hair Fracture Properties*”, MIT Measurement and Instrumentation Poster Session, Cambridge, MA, Nov 2018.

## ACTIVITIES AND AWARDS

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| <b>MIT Pi Tau Sigma (PTS) Mechanical Engineering Honor Society</b>   | Cambridge, MA       |
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| <b>MIT Media Lab “How to Make Almost Anything” Presenter</b>   | Cambridge, MA       |
| <ul style="list-style-type: none"><li>- Exhibited and demoed independent final project “KanKan: Kanji to Katakana Physical OCR Translator” to MIT Media Lab, professors, researchers and guests.</li><li>- Full Documentation: <a href="https://tinyurl.com/MarwaKanKan">tinyurl.com/MarwaKanKan</a></li></ul> | Dec 2018            |
| <br>   |                     |
| <b>Crown Prince International Scholarship Recipient</b>  | Riffa, Bahrain      |
| <ul style="list-style-type: none"><li>- Fully funded B.Sc. to Ph.D scholarship from the court of the Bahraini Crown Prince.</li></ul>  | April 2014- Present |
| <br>   |                     |
| <b>MIT Japan Student Ambassador</b>  | Cambridge, MA       |
| <ul style="list-style-type: none"><li>- Appointed as point person for MIT students in Japan</li><li>- Invited as a guest speaker at MIT Japan events and information sessions</li></ul>  | June 2018- 2020     |

## MIT Digital Arts and Animation Group

Cambridge, MA

- Vice President (2019-2020), Marketing Director (2017-2019)
- Invited and handled all logistics for bringing guest speakers on campus
- Taught several digital art and illustration workshops on campus

## Bahrain Ministry of Education: First on Bahrain (Title)

Bahrain

- Ranked first amongst all Bahraini public school students in both high school (99.9%) and middle school (99.82%).

June (2011, 2014)

## Ahmed Al Omran Award

Bahrain

- Financial award gifted to the Bahraini student ranked first (nationally) from Al Omran Family.

June 2014

## Bahrain Ministry of Education National Math Award

Manama, Bahrain

- Awarded first place for the national Quality Education's Math Assessment by Bahrain Ministry of Education at the Royal Palace of Ghudaibiya, Bahrain.

Oct 2012

## SKILLS

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**Hardware Skills:** *Laser cutting, 3D printing, Drill pressing, Band sawing, CNC mill operation, PCB Design with Mill, Casting and molding, Vinyl cutting.* (Comfortable with operating various machine shops and hand tools).

**Software:** *C# (Unity), Python, Solidworks (CAD), Fusion360 (CAD + CAM), C++ (Arduino), HTML, CSS, KiCAD, Kotlin (Android Studio).*

**Art & Design:** *Storyboarding, 2D Animation, Digital Illustration (Raster and Vector art), UI/UX, Clipstudio Paint, Adobe Suite (Illustrator, Photoshop, Premiere Pro, Animate, After Effects).*

**Languages:** *Arabic (native fluent), English (bilingual fluent), Japanese (JLPT N2)*

## REFERENCES

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### Dr. Brian Anthony

Principal Research Scientist  
Mechanical Engineering  
Massachusetts Institute of  
Technology  
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### Professor David Wallace

Professor of Mechanical  
Engineering  
Mechanical Engineering  
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### Dr. Barbara Hughey

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