# MARWA ALALAWI

Riffa,
Kingdom of Bahrain

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malalawi.github.io

## EDUCATION

**Massachusetts Institute of Technology (MIT)** — Cambridge, MA

- BSc. in Mechanical Engineering — GPA: 4.8/5.0 — May, 2020
- MIT Fabrication Lab '19
- Additional coursework in EECS
- Concentration in Advanced Modern Japanese

**Phillips Academy Andover** — Andover, MA

- *Cum Laude* Honor Society. — GPA: 5.7/6.0 — June, 2016
- Accelerated AP Physics, Math, Chemistry

**Khawla Secondary Girls School** — Manama, Bahrain

- Ranked First in Bahrain. — GPA: 99.9% — June, 2014
- Bahrain Tawjihiya Degree, Concentration in math and physics

## RESEARCH EXPERIENCE

**Device Realization Group (MIT, Mechanical Engineering)** — Cambridge, MA

Advisors: Brian Anthony, Yuwei Li — Sep 2019- May 2020

- Developed a Virtual Reality (VR) 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- Sep 2017

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

## TEACHING EXPERIENCE

***Teaching Assistant,* Product Engineering Processes (MIT 2.009)** — Remote

Aug 2020-Present

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

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

Feb- May 2020

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

***Lead Instructor and Curriculum Developer,* MIT International Science and Technology Initiative**

Amman, Jordan

Jan- Feb 2020

- Led team of four to teach a 120 Jordanian high schools student at the Amman Academy, and Jubilee School, in monthlong STEM program
- Developed 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*, MehtA+ Machine Learning Bootcamp** Online

May- Aug 2020

- 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/
- Developed and taught online Python recitation for 40 students

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

Sep 2017- March 2020

- Trained 50+ MIT Freshmen on shop machines (laser cutter, 3D printer, bandsaw, drill press, hand tools) through a two-day hands on project
- Supervised and assisted MIT undergraduate and graduate students on several shop machines (laser cutter, 3D printer, vinyl cutter, desktop CNC mill for PCB fabrication)

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

Sep- Dec 2017

- Directed and assisted about 30 students with mechanics concepts during in-class problem-solving.
- Graded about 30 student problem sets on weekly basis

## WORK EXPERIENCE

*Junior Experience Designer*, **Universal Studios Japan** Osaka, Japan

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

*XR Intern*, **GREE** Tokyo, Japan

June- Aug 2018

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

## PUBLICATIONS

- 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

- 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

- 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

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

## ACTIVITIES AND AWARDS

**Crown Prince International Scholarship Recipient** Riffa, Bahrain
April 2014- Present

- Fully funded B.Sc. to Ph.D scholarship from the court of the Bahraini Crown Prince

**MIT Pi Tau Sigma (PTS) Mechanical Engineering Honor Society** Cambridge, MA

**MIT Media Lab "How to Make Almost Anything" Presenter** Cambridge, MA
Dec 2018

- Exhibited and demoed independent final project "KanKan: Kanji to Katakana Physical OCR Translator" to MIT Media Lab, professors, researchers and guests
  - Full Documentation: tinyurl.com/MarwaKanKan

**MIT Japan Student Ambassador** Cambridge, MA
June 2018- 2020

- Appointed as point person for MIT students in Japan
- Invited guest speaker at MIT Japan events and information sessions

**MIT Digital Arts and Animation Group** Cambridge, MA
2017-2020

- *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 in Bahrain (Title)** Bahrain
June (2011, 2014)

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

**Ahmed Al Omran Award** Bahrain
June 2014

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

**Bahrain Ministry of Education National Math Award** Manama, Bahrain
Oct 2012

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

## SKILLS

**Hardware:** *Laser cutting, 3D printing, Drill pressing, Band sawing, CNC mill operation, PCB Design with Mill, Casting and molding, Vinyl cutting. (*Comfortable with 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), Clipstudio Paint, UI/UX, Adobe Suite (Illustrator, Photoshop, Premiere Pro, Animate, After Effects).*

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

## REFERENCES

**Dr. Brian Anthony**
Principal Research Scientist
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**Professor David Wallace**
Professor of Mechanical Engineering
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