

**Name: Alaa Salman Algargoosh**

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## Education

- 2015 - Ongoing **Ph.D. in Architecture-** Building Technology  
University of Michigan, United States.
- 2009 - 2013 **M.Sc. in Architecture-** Sustainable Architecture  
University of Dammam, Saudi Arabia.
- 2002 - 2007 **B.Sc. in Interior Architecture**  
King Faisal University, Saudi Arabia.

## Academic Positions

- 2020 **Instructor in Performing Arts and Technology**, University of Michigan.
- 2016 - 2018 **Teaching Assistant in Architecture** at Taubman College of Architecture and Urban Planning, University of Michigan.
- 2013 - 2014 **Lecturer in Interior Design**, College of Design, University of Dammam.
- 2010 - 2013 **Teaching Assistant in Interior Design**, College of Design, University of Dammam.

## Professional Experience

- 2008 **Project Engineer at Saudi Aramco**  
Was the first woman to work as a project engineer, led the project team, and promoted for proposing innovative ideas that promote sustainability through construction.
- 2007 **Architect at Zuhair Fayeze Partnership Consultants**  
Worked on a major project that includes the housing of King Abdullah University of Science and Technology.

## Peer-reviewed publications

- Algargoosh, A. S. (2016).** "Review of aspects that shape the aural experience in worship spaces," Proc. Meet. Acoust. 22ICA, Acoustical Society of America, doi:10.1121/2.0000435. doi:10.1121/2.0000435
- Algargoosh, A. S., Eldien, H. H., and El-Wakeel, H. (2013).** "Improving the indoor sound quality by using cymatic shapes," Proc. Meet. Acoust., doi:10.1121/1.4799428. doi:10.1121/1.4799428
- Algargoosh, A. (2011).** "Increasing the Effectiveness of the Architectural Design Process by Simulation," Second Sci. Conf. Grad. Students, Jeddah.

## Conference presentations

- Algargoosh, A. (2020).** "Analysis of the Acoustic Characteristics of Spaces Relating to their Emotional Impact (abstract accepted)," Acoust. Virtually Everywhere,.
- Algargoosh, A. (2020).** "The Emotional Impact of Acoustic Environments: Cases Studies of Worship Spaces," Virtual Student Summer Talks,.

**Algargoosh, A. ; S. B. (2019).** “The impact of the acoustic environments on the emotional experience of worship spaces,” *J. Acoust. Soc. Am.*, , doi: 10.1121/1.5137477. doi:10.1121/1.5137477

**Algargoosh, Alaa; Granzow, J. (2019).** “Developing a new method for analyzing room acoustics based on auralization,” *J. Acoust. Soc. Am.*, , doi: 10.1121/1.5136710. doi:10.1121/1.5136710

## Conference Proceedings

**Algargoosh, A. (2017).** “Creating a psychologically supportive environment through aural architecture,” 24th Int. Congr. Sound Vib. ICSV 2017,.

Al-Ghamdi, Sarah A.; **Algargoosh, Alaa;** Alshaibani, K. A. (2015). “Energy Conservation by Retrofitting: An Overview of Office Buildings in Saudi Arabia,” *Int. Inst. Eng.* May 22-23, 2015 Dubai, doi:10.15242/iee.e0515005. doi:10.15242/iee.e0515005

## Patents

**Algargoosh, Alaa;** Hossameldin, Hany; El-Wakeel, H. (2015). *Sound diffuser inspired by cymatics phenomenon*, United States patent, 9058799. doi:10.13140/RG.2.1.2092.2408

**Algargoosh, Alaa;** Hossameldin, Hany; El-Wakeel, H. (2015). *Sound diffuser inspired by cymatics phenomenon*, Saudi Arabia patent, 4439.

## Other Publications

**Algargoosh, Alaa;** Granzow, J. (2019). *Developing A New Method for Analyzing Room Acoustics Based on Auralization “How can a room shape your voice?”* Available: <https://acoustics.org/2aaa-developing-a-new-method-for-analyzing-room-acoustics-based-on-auralization-how-can-a-room-shape-your-voice/>

**Algargoosh, A. (2011).** “The memory of the Senses and Architectural Ethics,” *Albenaa Mag.*,.

## Guest/Invited Lectures and Talks

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| Oct. 2020 | <b>Sound Affects :The Impact of the Acoustic Environments on the emotional experience of Worship Spaces.</b><br>Course: (PAT 521) Advanced Psychoacoustics. Performing Arts & Technology department, University of Michigan.. |
| Sep. 2020 | <b>Architectural Acoustics</b><br>Course: (ARC 48768) Indoor Environmental Quality (IEQ); Energy, Health and Productivity, Architecture School, Carnegie Mellon University.   |
| Apr. 2020 | <b>Impact of the Acoustic Environments on Emotions and Well-being.</b><br>Michigan University-wide Sustainability and Environment (MUSE) Workshop.  |
| Feb. 2020 | <b>Aural Architecture as Affect: Room Acoustics &amp; the Human Experience.</b><br>Seminar. Performing Arts & Technology department, University of Michigan.  |
| Nov. 2019 | <b>Sound Affects :The Impact of the Acoustic Environments on the emotional experience of Worship Spaces.</b><br>Course: (PAT 521) Advanced Psychoacoustics. Performing Arts & Technology department, University of Michigan.  |

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- Oct. 2019      **Aural Architecture: Auditory experiences created by spatial attributes.**  
Course: (ARCH 506) Research for Design Practices. Taubman College of Architecture, University of Michigan.
- Apr. 2019      **Aural Architecture: Auditory experiences created by spatial attributes.**  
Course: (PAT 102) Acoustics and Psychoacoustics. Performing Arts & Technology department, University of Michigan.
- Feb. 2019      **Sound Affects: The emotional impact of Aural Architecture.**  
Event: Research Remix: Art, Technology, & User Experience. Duderstadt Center, University of Michigan.
- Feb. 2019      **VR for advancing research vs. research for advancing VR.**  
Event: Media & Studio Arts Symposium. Duderstadt Center, University of Michigan.
- Apr. 2018      **Beyond Journaling: A Reflection Toolbox for Community Engagement.**  
Engaged Pedagogy Initiative Symposium. LSA's Community-Engaged Academic Learning and Rackham's Program in Public Scholarship, University of Michigan.
- Oct. 2018      **Architectural Acoustics Simulation.**  
Course: (ARCH 605) Environmental Design Simulation. Taubman College of Architecture, University of Michigan.
- Oct. 2018      **Research and Invention.**  
Nov. 2017      Course: (ARCH 506) Research for Design Practices. Taubman College of Architecture,  
Nov. 2016      University of Michigan  
Mar. 2016

## Media Coverage

- To be published in Dec. 2020      **MIT Technology Review**  
Interviewed to talk about my work which received the Innovators Under 35 Award by MIT Technology Review, the future of sound technology, research and innovation.
- 12/17/2019      **Student Spotlight, Website of Rackham Graduate School, University of Michigan**  
An article about my research titled "Virtual Buildings, Real Emotions."
- 12/10/2019      **Adwa Podcast**  
Interviewed by Phonograph Radio to talk about my research
- 10/30/2019      **Emarites News Agency**  
Mentioned as one of the Winners of Innovators Under 35 Award by MIT Technology Review with a description of my work.
- 04/14/2019      **Okaz Newspaper**  
Mentioned as a panelist in the Summit of Saudi Student in the U.S. titled "Transformation Journey through Studying Abroad" at Indiana State University.
- 04/14/2019      **Alwatan Newspaper**, mentioned as a panelist in the Summit of Saudi Student in the U.S. titled "Transformation Journey through Studying Abroad" at Indiana State University.
- 02/05/2017      **Hia magazine**, interview.
- 03/09/2016      **"Bssmat Mbt3th" book**, which contains the influential international achievements of the Saudi students around the world, included a page about my achievements. The book was launched by the Ambassador (Prince Abdullah Bin Turki) and the Saudi Cultural Attaché in America (Dr. Mohammed Al-Issa) in Washington on September 3rd, 2016.

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- 12/01/2016     **Alyaum Newspaper**, an article about my invention, which was granted a Saudi and a US patent.
- 05/09/2015     **Makkah Newspaper**, mentioned as an inventor in an article about the outstanding achievements of the Saudi students studying in the US.
- 14/02/2014     **Subscribe Show**, interviewed on MBC channel in the show that represents the achievements of the innovative Saudi young people.
- 03/07/2013     **Asharq Alawsat Newspaper**, an article about my contribution to the Art Science Innovation workshop in Paris.
- 08/03/2012     **Alyaum Newspaper**, selected to represent the successful Saudi working women in the International Working Women's Day.

### Professional Organizations

- 2013            Membership of Saudi Inventors.
- 2012            Membership of Acoustical Society of America.
- 2006            Membership of the Saudi Council of Engineering.

### Scholarships, Awards, Honors and Grants

- 2020            **ARCC King Student Medal For Excellence in Architectural and Environmental Research**, The Architectural Research Centers Consortium.
- 2020            **Humanities Institute Graduate Student Fellowship**, LSA Institute for the Humanities, University of Michigan.
- 2019            **MIT Technology Review- Innovators Under 35 MENA**, An award that recognizes the "innovators under the age of 35 who will shape the future by transforming existing industries and establishing new ones."
- 2019            **CHRG 2019 Summer Institute Scholarship**, Concert Hall Research Institute.
- 2019            **Andrew W. Mellon Foundation Grant** for Michigan-Mellon Project on the Egalitarian Metropolis Grant, Mapping the Egalitarian Metropolis: Spaces of Hope.
- 2019            **Barbour Scholarship**, one of the oldest and most prestigious awards for female leaders in Science and other fields, Rackham Graduate school, University of Michigan.
- 2019            Nominated by Taubman College of Architecture and Urban Planning for **Rackham Outstanding Graduate Student Instructor Award**, University of Michigan.
- 2019            Selected to participate at the **MIT Reality Virtually Hackathon**.
- 2019            **Dow Sustainability Fellowship**, Dow and The Graham Institute.
- 2019            **Rackham Conference Travel Grant**, University of Michigan.
- 2018            **Arts Integrative Interdisciplinary Research Grant**, Arts Engine, University of Michigan,
- 2018            **Outstanding Doctoral Student Award**, Taubman College of Architecture and Urban Planning, University of Michigan.
- 2018            **Rackham Graduate Student Research Grant**, University of Michigan.
- 2018            **Engaged Pedagogy Fellowship**, Community-Engaged Academic Learning, University of Michigan.

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2017	<b>Acoustical Society of America's Student Council Travel Award.</b>
2017	<b>Rackham International Students Fellowship for outstanding international students,</b> University of Michigan.
2017	<b>Rackham Conference Travel Grant,</b> University of Michigan.
2016	<b>Honored by the Ambassador Abdallah AlMouallimi</b> during "This is My Fingerprint" exhibition in New York, which presents the best Saudi students' achievements.
2016	<b>Rackham Conference Travel Grant,</b> University of Michigan.
2015	<b>University of Michigan Doctoral Program Scholarship.</b>
2014	<b>Saudi Council and Ambassador in the US,</b> honored for my achievements and inventions.
2013	<b>Saudi Arabian Cultural Mission Scholarship Program.</b>
2013	<b>King Abdulaziz and His Companions Foundation for Giftedness and Creativity,</b> won the Competition and had been selected to present my invention (cymatic sound diffuser) in Ibtikar (an international exhibition for inventions).
2013	<b>King Abdulaziz Center for World Culture (Keystone program),</b> had been selected to represent my team and participate with our invention (sound absorbers decorative tile) in the annual ArtScience Innovation Workshop in Paris.
2013	<b>King Abdulaziz Center for World Culture (Keystone program),</b> had been selected to conceptualize and translate creative ideas into marketable products and services in the field of Synthetic Biology. The program is affiliated with the Harvard ArtScienceLab.
2012	<b>Master Thesis Grant,</b> University of Dammam.
2007	Honorary three years' membership for Academic Excellence by <b>The Saudi Council of Engineering.</b>
2003 - 2007	<b>Yearly Honor for Academic Excellence,</b> University of Dammam.

## Teaching Experience

2020	PAT 102	<b>Acoustics and Psychoacoustics</b>
2016, 2017, 2018	ARCH 425	<b>Environmental Systems</b>
2016, 2018	ARCH 527	<b>Integrative systems</b>
2013	INDSG 503	<b>Graduation Project Thesis</b>
2012, 2013	INDSG 404	<b>Environmental Control Systems 2</b>
2010, 2011, 2012	INDSG 301	<b>Design studios 5</b>
2012	INDSG 308	<b>Working Details 2</b>
2011, 2012	INDSG 307	<b>Design studios 6</b>

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2011	INDSG 302	<b>Working Details 1</b>
2010	INDSG 504	<b>Design studios 10</b>
2010	INDSG 213	<b>Building Construction Methods</b>

## Languages

Arabic, English and French.

## Certificates

2019	LEED Green Associate Certificate.
2019	U-M Graduate Teacher Certificate, Center for Learning and Teaching, University of Michigan.

## Computer/Technical Skills

### Operating Audio recording studios.

**Acoustics software:** EASE, Acoustic 2D (AC2), Acoustic 3D (AC3), Odeon, QRDude, DIRAC, Chuck, Raven and Audacity.

**Programming software:** MATLAB, Arduino.

**Statistics software:** R studio.

**Virtual reality:** Oculus, 360 Samsung Gear, ambisonic VR audio.

**Energy simulation software:** e QUEST, Energyplus and Ecotect.

**Drafting and graphics software:** Rhino, Sketchup, AutoCAD, Form Z, PhotoShop and 3D Studio Max.

**Management simulation software:** Extend.

## Leadership and other Activities

2020	Mentoring Master's student in Architecture as part of the Equity in Architecture Education Consortium Mentoring Program.
2020	Chairing a session in the Acoustical Society of America's Virtual Conference
2020	Participnat at Midwest I-Corps Node Introduction to Customer Discovery & Value Proposition Design, a program sponsored by the National Science Foundation to help researchers improve the impact of their innovations.
2020	Moderating a session in the graduate student conference titled "Utopia Vs. the City" at the University of Michigan
2019	Invited as a reviewer for Design Studio (Institutions- ARCH 552).
2019	Volunteering at Xplore Engineering workshops to teach students (entering the 4th through 7th grade) about acoustics as part of the Michigan Acoustics student group.
2019	Mixed Methods Dissertation intensive three-days workshop organized by the University of Michigan.
2019	Principle researcher for the project titled "Sounds in the City: Mapping Acoustic Environments in Communities of Faith in Detroit and Dearborn". The project was part of the Michigan-Mellon Project on the Egalitarian Metropolis which resulted in an exhibition titled "Mapping the Egalitarian Metropolis: Spaces of Hope".

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- 2019 Judging Students Research at the Undergraduate Research Symposium, University of Michigan.
- 2019 Organizing a workshop on teaching efficiently with technology for graduate student instructors at the University of Michigan
- 2018 Member in the Search Committee for the Director of Doctoral Studies, University of Michigan.
- 2018 Organizing a workshop titled: Using Digital Tools to Facilitate Student Collaboration with the Center for Research on Learning and Teaching, University of Michigan.
- 2018 Consultant for Graduate Student Instructors, Center for Research on Learning and Teaching, University of Michigan.
- 2018 Elected to be the Doctoral Student Representative at the College of Architecture, University of Michigan.
- 2018 Organizing member of the Graduate students International Conference at the College of Architecture, University of Michigan.
- 2018 Michigan Acoustics student chapter representative.
- 2017 Board member of the Planning and Architecture Research Group.
- 2017 Member of the Sound Studies group at Rackham Graduate School- University of Michigan.
- 2017 Curating the doctoral colloquium conversation (The Critical City) at the University of Michigan.
- 2016 Curating the doctoral colloquium conversation (Conversations on Building Technology) at the University of Michigan.
- 2014 Participating in designing a proposal of a green roof for the building of CELOP (Center of English Language and Orientation) at Boston University.
- 2014 Assisting with various activities in the Boston Children Museum.
- 2013 Presenting a lecture for beginner entrepreneurs with the collaboration of Sayhat Association for Social Services.
- 2012 Organizing member of the Sustainability through Biomimicry conference.
- 2012 Preparing documents for the accreditation of National Organization for Assessment and Accreditation (NCAAA).
- 2010 - 2013 Participated in planning many symposiums and conferences at the University of Dammam, contributing as:
- Leader of the exhibition committee.
  - Coordinator of College of Design website.
  - Member of the scientific committee.
  - Member of the media committee.