

# Besmelh Alshaalan

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## EDUCATION

KAUST (King Abdullah University for Science and Technology)

Thuwal, KSA

**Masters in Computer Science**

**Anticipated Dec 2024**

- Relevant courses: *Computer Graphics, Deep Learning for Machine Vision, Data Analytics, Math for Machine Learning*

University of Rochester

Rochester, NY

**Bachelor of Science in Computer Science | Minor in Digital Media Studies**

**May 2023**

- GPA: 3.51; Relevant courses: *Machine Vision, Intro to A.I., AR/VR Interaction Design, Intro to HCI*

**Awards:** KAUST Gifted Student's Program (KGSP) Scholarship

## EXPERIENCE

**Directed Research, Nanovisualization Research Group, KAUST**

**Jan 2024 – Present**

- Converting an existing OpenGL based desktop application to WebGPU so it's accessible on more platforms.

**Teaching Assistant, University of Rochester**

**Aug 2021 – May 2023**

- Video Game Development class (Spring 2023), supporting students as they develop games in Unreal Engine.
- Recreational Graphics class (Fall 2022), supported students as they 3D modeled in Blender.
- iOS Mobile App Development class (Fall 2021), helped students as they developed iOS apps in Swift.

**Media Tech Intern, NBCUniversal, Los Angeles, CA**

**June 2022 – Aug 2022**

- Assisted in enhancement requests, quality assurance testing, user acceptance testing, and rollout of features.
- Developed a program to generate unique Microsoft Forms, to help verify information from business owners.

**Tech and Product Intern, Millie Group, New York, NY**

**May 2021 – Aug 2021**

- Finalized the features of Millie's internal website through user research and designed the UI/UX via Figma.
- Developed a full-stack React App using PERN Stack (PostgreSQL, Express, React, NodeJS), and managed the files and database through PostgreSQL & AWS.

**IBM Accelerate Software Apprenticeship, IBM, Virtual**

**May 2021 – July 2021**

- Enhanced the technical and foundational skills needed to succeed in the software development industry.

## PROJECTS

**WebGPU Raytracer**

**Nov 2023**

*Raytracer program implemented using WebGPU Shading Language, with photorealistic and toon-shading rendering.*

- Implemented glossy reflection, environment mapping, antialiasing, soft shadows, and motion blur.

**Boppity-Bop Lofi**

**Nov 2022 - Jan 2023**

*Audio visualizer website, with a relaxing window view (buildings, trees, clouds) that animates to Lo-fi music.*

- Developed using React Three Fiber to embed and animate the 3D models designed in Blender on a webpage.

**Phobigone**

**Aug 2022 - Dec 2022**

*VR game application to help users overcome their phobias (fear of the dark, heights, small spaces).*

- Designed a scene in *Unity* depicting a realistic cityscape with 3D building, animated objects, and collectable items.
- Evaluated the quality, effectiveness, and efficiency of the app through usability testing.

**BalanceBuddy**

**Jan 2022 - May 2022**

*Website to balance between students' schoolwork & internship search process through daily tasks & progress dashboard.*

- Conducted user research, designed prototypes in Figma, & performed usability testing for the working prototype.
- Developed the back-end of the webpage and Chrome extension using React, and set up a MongoDB database.

**Light Up**

**Dec 2020 - Jan 2021**

*An iOS app for brainstorming ideas; it displays random words and has the option to write ideas in "sticky notes".*

- Developed using Swift, managed the database with CoreData, and retrieved random words via an API call.
- Published to the App Store and localized in Arabic and English.

## EXTRACURRICULAR ACTIVITIES

**ShenTech Bootcamp, InnoX Academy, Shenzhen, China.**

**Jan 2024**

- Designed a shoe-cleaning device, by conducting thorough user research, prototype designs, and market analysis.
- Recognized as one of the top projects in the program.

**Student Volunteer, SIGGRAPH Asia 2022, Daegu, South Korea**

**Dec 2022**

- Supported the conference's events like the Computer Animation Festival & Emerging Technologies exhibition.

**Marketing & Design Team Lead, DandyHacks 2022, Rochester, USA**

**Mar 2022 – Nov 2022**

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- Contribute to bi-weekly team leads' meetings to plan for the University of Rochester's annual hackathon event.
- Lead a team of 4 to design and market publicized content, and utilize Airtable to keep track of tasks and goal.
- Increased participation by 60% (150 total) and project submissions by %277 (25 total) from the previous year.

## SKILLS

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- Python, Java, C, C++. C#, Swift, JavaScript, React, SQL, R, WebGPU, OpenGL
- Unreal Engine, Unity, Blender, Figma, Adobe Illustrator, Adobe Premiere Pro
- Adaptability, creativity, problem-solving, leadership
- Native, Arabic; Fluent, English