

Javaria Hassan

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Portfolio: javariahassan.github.io

Languages and Frameworks

- **Most Experience:** Python • JavaScript • C++ • HTML5/CSS3
- **Some Experience:** Haskell • Golang • PHP • SQL
- **Frameworks:** Flask • Vue.js • Node.js • React Native

Education

Harvard University

Master of Education in Learning Design, Innovation, and Technology.
CGPA 4.00.

09/2021 – 05/2022
Massachusetts, US

Massachusetts Institute of Technology

Cross-Registered Student at the Media Lab, Affective Computing Group

09/2021 – 12/2021
Massachusetts, US

Lahore University of Management Sciences (LUMS)

Bachelor of Science in Computer Science.
CGPA 3.51, Major GPA 3.76. Graduation with High Merit.

09/2016 – 05/2020
Lahore, Pakistan

Work Experience

- **Graduate Research Assistant**
at the **Learning, Innovation and Technology Lab** at **Harvard University**

06/2020 – Present
Massachusetts, US

Project Lead, Multimodal Data Toolkit Web Application. mmla.gse.harvard.edu

- Led the development of a data-collection web application for a team consisting of 4 engineers and a designer to transform an in-person Data Science class experience to a fully online format during the COVID pandemic.
- Developed the tools on the web app using **HTML5**, **CSS3**, **VanillaJS**, **Tensorflow.js**, **Python**, **Flask**, and **OpenCV**.
- Cut down classroom costs **from \$2000+ in physical sensors to \$0 in webcam-based sensing** in the browser using **JavaScript Machine Learning models**.
- Spearheaded the product launch; the app has now been used by **100+ Harvard graduate students**.

Project Lead, Learning Portal Web Application. lp.gse.harvard.edu (Restricted to Harvard network)

- Led the development of an educational web application for a semester-long Multimodal Analytics course offered to Harvard graduate students. The app provides video lectures to students and consensually captures their physiological and emotional data in the background for research purposes.
- Built the MVP from the ground up within a 1-month deadline.
- Computed measures of joint visual attention, joint emotional response, and joint body movement between students and the instructor to test the mediatory effect of these measures on learning.

- **User Experience Engineer at Data Science Dojo**

10/2020 – 05/2021

- Co-led the redesign of the company's LMS and spearheaded all design elements and brand consistency.
- Worked with **PHP**, **SQL**, **Azure Web Hosting**, and **Azure Media Services**.
- Implemented A/B testing to determine the reasoning behind customers' training services choices, and suggested solutions to improve underperforming services.
- Studied trends and user feedback, and extrapolated data with Python to understand customer needs and present key insights to management.

- **Undergraduate Research Assistant**
at the **Technology for People Initiative Lab** at **LUMS**

06/2019 – 05/2020

Project Lead, Analysis of Gender Bias in Pakistan's Print Media

- Trained **word embeddings** on 0.2 million news articles and used vector-similarity measures to demonstrate how the Pakistani media perpetuates gender stereotypes.
- Worked using **Google Colab**, **Pandas**, **NumPy**, **Scikit-learn**, and **Gensim** Python libraries, and **Vue.js** frontend.

Team Member, Analysis of Machine-Text Generation and Discrimination Models

Collaborated with professors from the University of Iowa to study neural language models and their potential to propagate misinformation.

- Conducted a systematic analysis of reviews posted on federal agency websites and e-commerce marketplaces to examine the possibility of reputation fraud using language models.
- Evaluated discriminatory models on (1) text samples with various stylometric features and (2) text samples generated by differently configured models.

• **Selected Course Projects**

Studying Parent Nonverbal Cues in Children's Engagement During Dialogic Reading

09/2021 – 12/2021

Under the supervision of Professor Rosalind Picard

- Conducted a quantitative and qualitative analysis of the DAMI-P2C (Dyadic Affect in Multimodal Interaction - Parent to Child) dataset to better inform a child's engagement during reading tasks.
- Designed a model that achieves 64.8% accuracy with a simple linear model and standardization of the parent's body pose features.

Project Lead, 3D-Sound Shooting Game for the Visually Impaired

09/2018 – 12/2018

Worked in a group of 5 to design a mobile game for visually impaired people in a **participatory design process**.

- Worked with 35 visually impaired participants in user research, design, and evaluation.
- Conducted interviews, contextual inquiry, and design workshops.
- Worked on low-fidelity prototyping, user flows, **Unity** development, and user testing.

• **Undergraduate Teaching Assistant**

09/2018 – 12/2019

• **Advanced Programming Course**

Designed a programming exam for 156 students on **asynchronous programming** in **Vue.js**. Supported students' learning of **functional programming** in **Haskell** and **concurrent programming** in **Golang**.

• **Introduction to Programming Course**

Supervised weekly labs for 100 students on programming exercises in **C++**.

• **Human-Computer Interaction Course**

Supervised classroom activities and conducted weekly progress meetings with student groups.

Awards and Publications

- "Augmenting Social Science Research with Multimodal Data Collection," **MDPI Sensors**, 2022.
- "Multimodal Data Collection Made Easy: The EZ-MMLA Toolkit," **Learning Analytics and Knowledge**, 2021.
- Winner: Futures Forum on Learning: Tools Competition by **Schmidt Futures**, 2021.
Received **\$35,000** out of **900 competing teams** to develop technological tools to support data science literacy.
- Speaker: "Using Multimodal Data to Prepare the Next Generation of Data Scientists", **Computer-Supported Collaborative Learning** in Times of Crisis Webinar Series, 2021.

Extracurriculars

- **Director of Resource Centre**, Harvard EdTech Association 09/2021 – Present
- **Design Lead**, Pakistani Women in Computing Organization, New England and Lahore Chapter. 06/2020 – Present
- **Creative Director**, PsiFi, the biggest Science Olympiad in Pakistan. 12/2020