OSAMA YOUSUF

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EDUCATION

The George Washington University (GWU)   **Washington, DC**
2021 – 2025

PhD student in *Computer Engineering*, Department of Electrical and Computer Engineering, School of Engineering and Applied Sciences.

Habib University   **Karachi, Pakistan**
2016 – 2020

Bachelor of Science in *Computer Sciences*, School of Science and Engineering, Class of 2020
Minor: Mathematics, **CGPA:** 3.92, **Honors:** Dean's List (x7), President's List (x3), Dean's Medal in CS.
Achievements: High Academic Achievement Awards, Top of the TOPS Award, Funded for Study Abroad Program '18 and Research Abroad Program '19 by Habib University, Pakistan.

Stanford University   **Stanford, CA**
Summer 2018

International Honor's Program Graduate, Summer Session '18.
Field of Study: Technology & Entrepreneurship, Web development technologies.

WORK EXPERIENCE

Graduate Research Assistant – GWU   **Jan '21 - Present**
Department of Electrical and Computer Engineering, George Washington University

- Researching Artificial Synapses for Brain-inspired Computing as part of the Adaptive Devices and Microsystems Laboratory (ADAM Research Group) at GWU. Currently working in collaboration with research teams from Western Digital (WD) and the National Institute of Standards and Technology (NIST).

Junior Frontend Engineer – Stellic Inc.   **Jul '20 – Jan '21**
Engineering Department – Stellic Inc.

- Worked in the capacity of a junior front-end engineer for Stellic – a modern degree auditing platform, focused towards improving student graduation & retention rates. The technology stack included AngularJS LTS at the front-end and Django 2.0 at the back-end, being delivered over a RESTful API. Primary responsibilities included adding new and modifying existing features to and from the codebase, logging changes, meeting bi-yearly development goals, coordinating with other development teams, and implementing continuous integration principles within the development workflow.

Production Analyst – Afiniti   **Feb '20 – Jul '20**
Production Support Department, Command Center, KHI

- Worked with the Global Production Support (GPS) team to ensure smooth running of Global Production Operations on Afiniti deployments as part of the UK Team. Primary responsibilities include providing complete operations support/post-deployment support to clients as well as internal teams and researching, responding, documenting, tracking and reporting all related requests and incidents.

Research Intern – Texas A&M   **May '19 – Aug '19**
Department of Computer Science and Engineering, Texas A&M University

- Served as a research scholar at the Pi Star AI and Optimization Lab, conducting collaborative research on a fully functioning code-base that enables an autonomous vehicle *AWS DeepRacer* to detect and follow race tracks through reinforcement learning and artificial intelligence.

IT Manager – Runway Radio   **Aug '18 – Jun '20**

Habib University

- Worked at the department of Integrated Sciences & Mathematics at Habib University, as the IT Manager at the student-run radio channel, *Runway Radio*. Primary responsibilities included

Teaching Assistant and Peer Tutor   **Aug '17 – May '18**

Habib University

- Assisted the Dean of the Computer Science Program at Habib University with core design and individual recitation sessions for the course "Discrete Mathematics". Also served as a peer tutor at the *Educational Help, Services and Academic Support* (EHSAS) Center.

RESEARCH & PUBLICATIONS

- Zhao, J., Huang, S., Yousuf, O., Gao, Y., Hoskins, B. D., Adam, G.C. (2021). Gradient Decomposition Methods for Training Neural Networks with Non-Ideal Synaptic Devices. In review at *Frontiers in Neuroscience*.
- Hoskins, B. D., Ma, W., Fream, M., Yousuf, O., Daniels, M. W., Goodwill, J., Madhavan, A., Tung, H., Branstad, M., Liu, M., Madsen, R., McClelland, J., Adam, G.C., Lueker-Boden M. (2021). A System for Validating Resistive Neural Network Prototypes. In *International Conference on Neuromorphic Systems 2021*.
- Daniels, M. W., Hoskins, B. D., Madhavan, A., Yousuf, O., Adam, G. C., Branstad, M., Tung, H., Madsen, R., Lueker-Boden, M., McClelland, J., Stiles, M. D. Quasisystolic Arrays for Pipelined and Resource-Efficient Neural Network Training. In *Sigma Xi at NIST: AI, Machine Learning, Engineering, Nanotechnology, and Math, 2021*.

META-CURRICULAR EXPERIENCE

Harvard's Project for Asian and International Relationships   **Feb 2018 – Feb 2019**

Harvard University

- *Technology & Entrepreneurship* delegate and ambassador at Harvard University's flagship HPAIR conference – 2018-2019.

Student Clubs & Committees   **Aug 2016 – Jul 2020**

Habib University

- Held executive positions in a number of student-led clubs on campus. Currently the Chief Executive Officer at the Physics and Astronomy Club (PAC), and the Technical Officer at Club Tachi (videogame club).
- Served as member of the Graduation Committee for the batch of 2019, which was a sub-committee of the Student Government (HUSG).
- Worked in a multitude of capacities in organizing internal and external events through these clubs & committees. Major events include HUMUN '17, TEDxHU '17, Code.Play(), OMICRON '17 and HUCon '18.

SKILLS

- Experienced in using deep learning frameworks including PyTorch and Tensorflow.
- Proficient in C, C++, Python, HTML, JavaScript, LaTeX, game programming, website development.
- Experienced in Project Management, GitHub workflow, terminal programming in LinuxOS, WAMP stack.
- Freelance work in Graphics Designing of all sorts (using the Adobe Suite). Passionate of audio and video editing.
- Expert in Computer Graphics and OpenGL with experience in modern OpenGL libraries including SFML, PyOpenGL, GLUT, freeGLUT, GLFW, GLEW, etc.
- Exceptional interpersonal, leadership, communication, and collaboration skills.
- Fluent in English and Urdu.