

# MOHAMMED BAHAROON

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[Website](#) | [Scholar](#) | [LinkedIn](#) | [GitHub](#) | [Twitter](#)

## EDUCATION

**Harvard Medical School, Harvard University**  
Master of Medical Science, Biomedical Informatics

Boston, MA  
Sep 2024 - May 2026

**Penn State University**  
Bachelor of Science, Software Engineering, *GPA: 4.0/4.0*

World Campus (Online)  
May 2021 - 2024

**Relevant Coursework:** Intermediate Programming; Object Oriented Design; Digital Design; Programming Languages Concepts; Matrices; Calculus with Analytic Geometry I & II; Ordinary Differential Equations.

**King Saud bin Abdulaziz University for Health Sciences**  
Bachelor of Health Informatics, *GPA: 4.74/5.0, Rank: 1/26*

Riyadh, Saudi Arabia  
Jul 2019 - Jun 2023

**Leadership:** Google DSC Founder and Lead, TEDxKSAU Technical Lead

**Medical Coursework:** Anatomy and Physiology; Principles of Disease (Immunology and Pathology); Basic Pharmacology; Biochemistry; Behavioral Sciences.

**Informatics Coursework:** Introduction to Health Care Systems; Information Systems; Analysis of Healthcare Data; Coding and Classification Systems; Health care Data Structures and Management; Systems Analysis.

## EXPERIENCE

**Vector Institute for Artificial Intelligence**  
*Research Intern - PI: Prof. Bo Wang*

Toronto, Canada  
May 2024 - Aug 2024

- Currently working on medical vision-language models.

**King Abdullah University of Science and Technology (KAUST)**  
Computational Sciences Group  
*Research Intern - PI: Prof. Dominik L. Michels*

Thuwal, Saudi Arabia  
December 2023 - May 2024

- Developed [Harmony](#), a multi-objective weakly-supervised and semi-supervised learning paradigm that learns general purpose visual representations across tasks.

**Tahakom**  
Systems Engineering Department  
*Software Developer Intern*

Riyadh, Saudi Arabia  
Mar 2023 - Jun 2023

- Developed a tailgating detection system with a +95% precision rate, tested throughout multiple days on real live stream data.

**King Abdullah International Medical Research Center**  
AI & Bioinformatics Department  
*Research Intern - Supervisor: Prof. Abdulrhman Aljouie*

Riyadh, Saudi Arabia  
Oct 2022 - Mar 2023

- Devised [HyMNet](#): a multimodal deep learning systems that combine fundus photographs with demographic information to predict hypertension, open-sourcing the code and model weights.

## PUBLICATIONS

- [1] **Baharoon, M.**, Klein, J., & Michels, D. L. (2024). Harmony: A Joint Self-Supervised and Weakly-Supervised Framework for Learning General Purpose Visual Representations. <https://arxiv.org/abs/2405.14239> [Under Review]
- [2] **Baharoon, M.**, Qureshi, W., Ouyang, J., Xu, Y., Aljouie, A., & Peng, W. (2023). Towards General Purpose Vision Foundation Models for Medical Image Analysis: An Experimental Study of DINOv2 on Radiology Benchmarks. <https://arxiv.org/abs/2312.02366> [Under Review]
- [3] **Baharoon, M.**, Almatar, H., Alduhayan, R., Aldebasi, T., Alahmadi, B., Bokhari, Y., Alawad, M., Almazroa, A., & Aljouie, A. (2023). HyMNet: a Multimodal Deep Learning System for Hypertension Classification using Fundus Photographs and Cardiometabolic Risk Factors. [arXiv preprint arXiv:2310.01099](#). [Under Review]

## AWARDS, HONORS, AND ACHIEVEMENTS

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- [Google CSRMP Scholar](#), Google Research Class 2022B
- [The President Walked Award](#), Penn State University 2022
- Nominated for Prince Faisal bin Bandar Award for Excellence and Creativity 2023

## TEACHING AND TALKS

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Teaching Mathematics to over 25,000 views at YouTube, [@Al-Jawhar](#).

Taught the 4-day course "[Introduction To Programming with Python](#)" to over 35 students at KSAU-HS.

Taught a 2-day intro machine learning course at KSAU-HS to over 20 students.

Presented a lecture on Deep Learning applications to over 400 people as part of an online AI Bootcamp.

Gave a talk on Computer Vision with TensorFlow to over 200 people on Zoom, part of GDSC events.

## SKILLS

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**Programming:** Python, PyTorch, C++, JavaScript, React, Django, PHP, HTML, CSS.

**Research:** Deep Learning, Computer Vision, multimodal Machine Learning, Medical AI.

**Technologies:** Linux, Git, Docker, Edge Computing (NVIDIA Jetson).

## PROJECTS AND OTHER EXPERIENCES

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### Neuromatch

*Technical Department Volunteer*

- Worked on building the portal used by more than 4500 students and TAs for applying to Neuromatch Academy [\[Link\]](#)
- Helped implement an attendance system for TAs to track students' attendance on the portal

### Rawiyaih

- Built a platform for Arabic writers to write and read novels for a community of other Arabic readers and writers. [\[Link\]](#)

## CERTIFICATIONS AND TRAINING

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**Deep Learning Specialization** - DeepLearning.AI

**T5 Data Science Bootcamp** – Saudi Authority for Data and Artificial Intelligence (SDAIA)

**NASA L'SPACE Academy** - NASA

**Google Data Analytics** – Coursera

**Intermediate JavaScript - MCIT PROGRAM** - Udacity