Abdelrahman Mohamed Helmy Elsayed Mohamed

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Education

2021 - 2023 | **Master** of Science in Computer Vision
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)
Thesis: "Negating Bias in Hybrid Transformers for Class Incremental Learning."
Gpa: **3.95/4.0**, *First Class Honours.*

2013 - 2018 | **Bachelor** of Engineering in Computer Engineering
Banha Faculty of Engineering, Egypt
Thesis: " Copy and Move Image Tampering Using DCGANs."
Gpa: **3.5/4**, *First Class Honours.*

Work Experience

Aug.2025 - Present | *PhD Fellow* — **AAU**, Denmark
PhD fellow with Pioneer Center of AI and Aalborg university. I work on multimodal affective reasoning with a focus on alignment and interpretability.

Dec.2022 - April 2025 | *Research Associate* — **MBZUAI**, UAE
Research associate in the natural language department in MBZUAI. I work on multi-modal reasoning and generation, with a focus on descriptive image captioning.

Aug.2021 - Dec.2022 | *Teaching Assistant* — **MBZUAI**, UAE
Teaching assistant for the course CV 701- Human and Computer Vision, Fall 2022 and Fall 2023. Assisting Faculty members with a range of different tasks including research, teaching, grading, administrative tasks, and Preparation of laboratory materials

Mar.2019 - Mar. 2020 | *Software Developer (Military Service)* — **National Company for Roads**, Cairo, Egypt
Developed the back-end and created the database of an inventory system using C#, entity framework and SQL server. Maintaining different windows applications and several databases

Dec.2018 - Jan. 2019 | *Instructor* — **National Telecommunication Institute**, Egypt
Instructor for two consecutive batches in the NTL big data science governmental program.

Dec.2018 - Feb. 2020 | *Junior Data Scientist (Part-time)* — **Analytics Patrols**, New Cairo, Egypt
Part of the data science team, developing computer vision algorithms tailored for the customer use cases. Leading POCs as a vendor for oracle business intelligence tool. Led two demos to two well-known companies, creating the dashboards and visualization that showcase the tool's capabilities.

Research Interests

The multi-disciplinary nature of AI has always piqued my interest. It constantly provides new challenges and learning opportunities that no other field could offer. Moreover, it allows working on problems that would potentially have a positive effect on society and provide a better quality of life.
My research revolves around multi-modal learning, with a special focus on advancing vision-language models. I'm interested in developing models with better reasoning abilities, which are also capable of continuously adapting to new knowledge and concepts over time. Enhancing these capabilities would enable broader application of these models and further push research boundaries.

Publications

The Devil is in the EOS: A Closer Look at Sequence Training for Detailed Image Captioning, accepted to COLM (2025) [Paper]

LLMs Can Compensate for Deficiencies in Visual Representations, accepted to EMNLP (2025) [Paper]

Casablanca: Data and Models for Multidialectal Arabic Speech Recognition, accepted at EMNLP (2024) [Paper]

Peacock: A Family of Arabic Multimodal Large Language Models and Benchmarks, accepted at ACL (2024) [Paper]

Violet: A Vision-Language Model for Arabic Image Captioning with Gemini Decoder Accepted at the First Arabic-NLP Conference (2023)(oral) [Paper] [Code]

D3former: Debiased Dual Distilled Transformer for Incremental Learning, accepted in the 4th CLVISION CVPR Workshop (2023). [Paper] [Code]

Object Detection in Aerial Images: What Improves the Accuracy?, Accepted in WIUT-UoW Computing Conference (2022) [Paper]

Honors and Awards

Mar. 2025 1st place in Tammathon 2025 hackathon.

Dec. 2024 2nd place in Hala Hackathon 2024. (AIXplore, smart travel agent)

Mar. 2022 2nd place in ICE-22 competition. (Smart Classroom Assistant via emotions recognition)

May. 2020 **MSc.** Awarded a Postgraduate Research Scholarship by Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) for a period of two years.

Aug. 2018 Top of my batch in the NTL big data science program.

June 2018 Among top 15 percentile of the class of Bachelors in Computer Engineering.

Computational Skills

Python Expert Knowledge- I am extensively using python to build novel machine learning algorithms for the last few years.

Pytorch Pytorch is usually my default choice due to its pythonic nature and object-oriented graph design approach.

Keras I have used Keras with Tensorflow and have gained decent familiarity with it, especially during my graduation project.

C# I have used C# to develop windows applications between the years 2019 and 2020.

SQL I have used SQL Server to create and manage databases between the years 2019 and 2020.

References

Prof. Zheng-Hua Tan
Professor of Machine Learning and Speech Processing Department of Electronic Systems, Aalborg University (AAU), Denmark
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Prof. Lars Kai Hansen
Professor, Head of section, Department of Applied Mathematics and Computer Science Technical University of Denmark (DTU), Denmark
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