

Karim Abdel Sadek

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EDUCATION

University of Amsterdam

MSc in Artificial Intelligence

Amsterdam, NL

Sep 2023 - June 2025

- Relevant Coursework: Machine Learning I, Deep Learning II, Game Theory, Knowledge Representation
- GPA: 8.9 / 10 (Equivalent to 4.0/4.0)

Georgia Institute of Technology

BSc in Computer Science – Exchange student

Atlanta, USA

Jan 2023 – May 2023

- Selected by academic merit to participate in the Exchange Program 2022-2023 with a full ride scholarship.
- Coursework: Deep Learning, Information Theory, Quantum Mechanics, Automata and Complexity
- GPA: 4.0/4.0

Bocconi University

BSc in Mathematical and Computing Sciences for Artificial Intelligence

Milan, IT

Sep 2020 – July 2023

- Relevant Coursework: Advanced Programming, Linear Algebra, Machine Learning, Advanced Mathematical Analysis, Algorithms and Data Structures, Game Theory, Optimization.
- Thesis: ‘*Machine Learning Augmented Algorithms with Reduced Number of Predictions*’, grade: 4/4
- Head Student, Course Representative, Student-Faculty Joint Teaching Committees Representative
- GPA: 3.7/4.0

WORK EXPERIENCE

Kruger AI Safety Lab - University of Cambridge

Research Intern

Cambridge, UK

Feb 2024 – Sep 2024 (Exp.)

- Working on Goal Misgeneralization and Specification Misgeneralization in RL
- Supervisors: Usman Anwar, Michael Dennis, David Krueger

Bocconi University, Department of Computing Sciences

Theoretical Computer Science Student Researcher

Milan, IT / Remote

Jun 2022 – Jan 2024

- First co-author on a paper titled ‘Algorithms for Caching and MTS with a reduced number of predictions’
- Research Area: Theory of Algorithms, ML-augmented algorithms, Online learning
- We propose new ML-augmented algorithms for Metrical Task Systems and caching, with an emphasis on optimizing performance through ML predictions while ensuring consistency, robustness, and smoothness, using the predictions parsimoniously.
- Paper has been accepted at ICLR 2024
- Supervisor: Prof. Marek Elias

Clearbox.AI

Machine Learning Intern

Turin, IT

Jun 2022 – Aug 2022

- Worked on the generation of synthetic data of single-table and multi-table datasets for internal and business purpose
- Benchmark of the SDV MIT library against the internal privacy metrics of the company, analyzed the results through advanced statistical methods
- Synthesized tens of dataset using both GANs and VAEs. Increased the metrics score on synthetic generated dataset by 21%

Bocconi University

Teaching Assistant

Milan, IT

Feb 2022 – Jan 2023

- I have been a TA for the course ‘Algorithms and Computing Theory’ taught by Luca Trevisan.
- Held weekly office hours and designed exercise sessions to improve student performance

PUBLICATIONS

Abdel Sadek Karim., Elias Marek., ‘Algorithms for Caching and MTS with reduced number of predictions’, *International Conference on Learning Representations (ICLR)*. 2024. URL: [Paper and Reviews](#)

Abdel Sadek Karim., Nulli, M., Velja, J., Vincenti J., ‘Explaining RL Decisions with Trajectories: A Reproducibility Study’, *Transactions on Machine Learning Research (TMLR)*; [Link to the Paper](#)

HONORS, AWARDS and SCHOLARSHIPS

University of Oxford, Bioinformatics Hub Conference Series

Oxford, UK

ML Group Competition Winner, Student Presenter

Jul 2022

- Winner of the AI LAB competition held by Prof. Francesca Buffa regarding breast cancer detection
- Designed an end-to-end ML pipeline, working on 4 datasets each consisting of 30k+ datapoints and 200+ features. Our team built 4 classifiers reaching a 96% accuracy in detecting hypoxia
- Received funding to present our work at one conference of the Bioinformatics Hub Conference Series organized by the Department of Oncology of University of Oxford.

Lead The Future Mentorship

Italy

Mentee

Sep 2022 - Present

- Among the few Italian students selected to be mentees for Lead The Future, a leading mentorship non-profit organization for students in Stem, with an acceptance rate below 20%

Scholarships and Grants

- Banca di Credito Cooperativo di Brescia: Merit Scholarship for Academic Achievements , €300 2014
- AFS Intercultura: AFS Scholarship for Academic Excellence. Covered the cost of my exchange year in Brazil for the academic 2018/2019, ~€4000 2018
- Banca di Credito Cooperativo di Brescia: Merit Scholarship for Academic Achievements , €500 2020
- Bocconi University: Funding to present the AI LAB winning project at Oxford University, ~€600 2021
- Georgia Institute of Technology: Full-ride scholarship, Spring '23, ~\$16,000 2023
- Banca di Credito Cooperativo di Brescia: Merit Scholarship for Academic Achievements , €600 2023
- University of Amsterdam: MSc Student Travel Grant for ICLR 2024, €500 2024
- Qualcomm Technologies and Ellis Amsterdam: MSc Grant, €2000 2024
- University of Toronto and CIFAR: AI Inclusive Scholarship for DLRL, ~ \$2900 2024
- Cooperative AI Summer School: Scholarship and Travel Grant, ~ \$2000 2024
- Krueger AI Safety Lab and ERA Fellowship: Research Intern Summer '24, ~ \$14,000. 2024

LANGUAGES & SKILLS

Languages: Italian: Native | English: Advanced, IELTS 8.0 | Portuguese: Advanced, C1 | Spanish: Good, Dele B1

Skills: Advanced proficiency in Python |Tensorflow, PyTorch, Jax | R | C

EXTRACURRICULARS

Student Associations:

- Head of Research at Bocconi Students for Data Science and AI
- Member at Bocconi Students for Space Developments

Volunteering:

- Teacher Volunteer: Taught math and physics to final year high-school students in a difficult context in Brazil
- AFS Volunteers: I helped and mentored people who will spend a school period abroad to develop the social and cultural skills, and sensibility needed for such life experience. I gave them advice speaking about my experience in Brazil. Prepared over 60 students.