

# Muhammad N. ElNokrashy

APPLIED SCIENTIST · ML / AI · SOFTWARE ENGINEER

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## Education

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Bachelor of Science in Computer Science--Honors, Minor in Mathematics  
THE AMERICAN UNIVERSITY IN CAIRO (AUC)

Cairo, Egypt  
2014–2018

- GPA: 3.57 (Major: **3.78**) Thesis: *Neural Video Segment Indexing and Retrieval by Text Queries*  
🔗 <https://github.com/bkhmsi/forget-me-not>

## Selected Publications

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<https://scholar.google.com/citations?user=LMKKHqQAAAJ>

(Co-FIRST AUTHOR • ORAL) In **ACL 2024**. *62nd Annual Meeting of the Association for Computational Linguistics*.  
🔗 Investigating Cultural Alignment of Large Language Models.  
🔗 (arXiv:2401.08919) <https://aclanthology.org/2024.acl-long.671/>

(FIRST AUTHOR • ORAL) In **ArabicNLP 2024**. *Second Arabic Natural Language Processing Conference*.  
🔗 A Context-Contrastive Inference Approach To Partial Diacritization.  
🔗 (arXiv:2401.08919) <https://aclanthology.org/2024.arabicnlp-1.8/>

(FIRST AUTHOR • ORAL) In **AMTA 2022**. *Biennial Conference of Association for Machine Translation in the Americas*.  
🔗 Language Tokens: A Frustratingly Simple Approach Improves Zero-Shot Performance of Multilingual Translation.  
🔗 (arXiv:2208.05852) <https://aclanthology.org/2022.amta-research.6/>

(Co-FIRST AUTHOR • SPOTLIGHT) In **MemARI (NeurIPS 2022); L2L (ICLR 2021)**. *Learning to Learn Workshop*.  
🔗 The Emergence of Abstract and Episodic Neurons in Episodic Meta-RL.  
🔗 (arXiv:2104.02959)

(Co-FIRST AUTHOR • ORAL) In **WANLP-20 (COLING)**. *Fifth Arabic Natural Language Processing Workshop*.  
🔗 Deep Diacritization: Efficient Hierarchical Recurrence for Improved Arabic Diacritization.  
🔗 (arXiv:2011.00538) <https://aclanthology.org/2020.wanlp-1.4>

## Professional Experience

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AI RESEARCH LEAD, COFOUNDING ENG. AT EAI

EAJ, EnergyAI Berlin, Egypt 2025–Present

- Establishing a small team on small foundation model research and development, with a focus on agent-capable LMs.

RSDE AT MICROSOFT AI

EDC, Microsoft, Egypt 2023–2025

- *Researched* recommendation and personalization systems for real-time News feeds
- *MSN*: *Led development* of monitoring & insight tools for metrics, quality control & incident response for notifications
- *Researched* Small Language Models (SLM), and model and data efficiency for edge and high-volume scenarios
- *Won* most creative in social media product specification internal hackathon

APPLIED SCIENTIST AT MICROSOFT TRANSLATOR

ATLC, Microsoft, Egypt 2020–2023

- *Led and delivered* LangTokens—improving *translation into non-English languages* by 38.7% relative avg. COMET
- *Developed & maintained* an in-house multi-node large model training framework
- *Researched* filtering and data efficiency for NMT; focus on low-resource languages

RSDE AT LUIS.AI

ATLC, Microsoft, Egypt 2018–2020

- *Developed & deployed* interpretable sparse word embeddings—improved performance by 43% and runtime by 4x
- *Researched* multi-lingual (*Write once, deploy in many languages*) and contextual (multi-turn chat) embeddings for data efficiency in hand-crafted NLU scenarios—before Large Language Models (LLM)

## Volunteering & Outreach (recent)

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- **Intern Mentor (Best Mentor Award)** at Summer Engineering Program, ML specialization, 2022, Microsoft, Cairo.
- **Volunteer Judge** at First AUC Robotics Virtual Hackathon, 2020, AUC, Cairo.
- **Volunteer Judge (Junior Division)** at Minsweepers 2019, AUC, Cairo.
- **IndabaX Speaker** *A History of Text Representations*, 2019, AUC, Cairo.

## Skills & Technologies

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- ML/AI (7+ years): Python, PyTorch, HuggingFace. • Data Wrangling (1+ years): PySpark, Pandas, SQL, KQL/Kusto QL.
- Asset & Project Management (5+ years): Git, Github, Azure DevOps. • Low Level (2+ years): C++, Linux.
- New (<1 year): Rust, Parallel Programming, CUDA. • Other (<2 years): C#.