Mohamed Salem Mohamed Elaraby

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CURRICULUM EMPHASIS

Natural Language Processing - Summarization- Computational Argumentation.

EDUCATION AND ACADEMIC RECORDS

2021–2026	School of Computer Science **PhD: University of Pittsburgh, USA**
2014–2017	Department of Electronics and Electrical Communications **MSc: Cairo University, Egypt**
2009–2014	Department of Communications and Computer Engineering, Credit Hours System **BSc, Cairo University, Egypt**

PROFESSIONAL EXPERIENCE

Sep21–Present	**PETAL Lab: Department of Computer Science** *Graduate Research Assistant.* **CASUM:** Building argument aware summarization models for legal opinions. **CourseMirror:** Improving the summarization of students reflective writing (students opinions about lectures).
May25-Sep25	**Zillow Inc.** *Applied Scientist Intern* Developed `SynClaimEval` an evaluation study of long context synthesis in long context claim verification.
May24-Aug24	**Microsoft** *Research Intern at Research and Open AI Research (ROAR) team* Worked on automatic redteaming of Large Language Models.
May23-Aug23	**Tiktok Inc. (ByteDance)** *Research Intern (NLP) at SAMI team* Developed HaLo: Hallucination and reduction framework in open source LLMs focusing on BLOOM7B

Muhammad S. Elhady

Apr21–Aug21	**Agolo** *Senior Natural Language Processing Engineer.* **Headline Generation:** Built a key-phrase based Headline Generation. **Evaluation Framework:** Built an evaluation API using python to standardize summary evaluation.
Jun 20 – Apr 21	**Microsoft (Advanced Technology Lab Cairo)** *Data Scientist (Contract).* Working on Improving Acoustic Modeling for Arabic Speech Recognition Systems using transfer learning, knowledge distillation and domain adaptation techniques. • **Arabic Yemeni:** Provided the models for Microsoft new locale Arabic Yemeni. • **Gulf Assistant Scenario:** Provided the models for assistant scenario in speech recognition. • **Language Model Augmentation** Provided new techniques to augment Language Models.
Dec 18 – Jun 20	**Raisa Energy LLC.** *Data Scientist II.* Building analytical and predictive models for the oil and gas domain • *DSU Extraction:* Developing an Information Extraction tool based on state of the art Natural Language Processing techniques to extract entities in legal documents. • *Parent-Child:* Used Data analytic techniques to study the effect of neighboring wells on the production of the well to be drilled • *Well-Spacing:* Built an algorithm that automates calculating spacing between wells and return each well neighbor's within 1 Mile. • *TC-module:* Built a hybrid feature-based and Deep Learning time series forecasting algorithm to predict oil production in undeveloped areas. • *ML-Interpret:* Supervised an intern in building a tool that explains machine learning model's predictions.
Sept 17–Dec 18	**School of Information The University of British Columbia, Canada** *Research Assistant (Natural Language Processing Lab).* • Arabic Dialect Identification: Introduced a new dataset for city level dialect identification, introduced two new models in Arabic dialect identification. • Emotion Detection: Contributed in the 2018 WASSA competition , ranked 4th out of 30 in final evaluation
Oct 15–Aug 17	**RDI Research and Development International, Egypt** *Researcher* at Speech Processing team at RDI. • Hafss: Built a Computer Aided Pronunciation learning system for Arabic based on Deep Neural Network acoustic Model. • MGB Arabic 2016 Challenge:Contributed in building RDI Large Vocabulary system, helped introducing new DNN based Features for Speech Recognition. • Contributed in RDI Large Vocabulary Speech Recognition Engine.

Muhammad S. Elhady

Sep 14–Oct 15	**German University In Cairo, Egypt**

Teaching Assistant at the Faculty of Information Engineering and Technology.

- Teach to ∼20 students per section in the following courses:
  - Digital Logic Design   Fall 2014
  - Electric Circuits I   Fall 2014
  - Electric Circuits II   Spring 2015
  - Laboratory   Spring 2015
- Supervise several undergraduate projects and lab experiments.

July–Sep 14	**Valeo Inc., Egypt**

Graduate Intern — GEEDS Team AutoSAR service line.

- Self-studied many Automotive Concepts (e.g. AutoSaR, CAN protocol and LIN protocol).
- Developed an Automatic tool for testing on different ECUs using configurable hardware automated for testing

Publications
* indicates equal contribution

Peer-Reviewed Papers

1. **Mohamed Elaraby**, Jyoti Prakash Maheswar. *SynClaimEval: A Framework for Evaluating the Utility of Synthetic Data in Long-Context Claim Verification.* Eval4NLP @ AACL 2025.

2. **Mohamed Elaraby**, Diane Litman. *Lessons Learned in Assessing Student Reflections with LLMs.* BEA Workshop @ ACL 2025.

3. **Mohamed Elaraby**, Huihui Xu, Morgan Gray, Kevin Ashley, Diane Litman. *Adding Argumentation into Human Evaluation of Long-Document Abstractive Summarization: A Case Study on Legal Opinions.* HumanEval Workshop @ LREC-COLING 2024.

4. **Mohamed Elaraby**, Diane Litman, Xiang Lorraine Li, Ahmed Magooda. *Persuasiveness of Generated Free-Text Rationales in Subjective Decisions: A Case Study on Pairwise Argument Ranking.* Findings of EMNLP 2024.

5. **Mohamed Elaraby***, Yang Zhong*, Diane Litman, Ahmed Ashraf Butt, Muhsin Menekse. *ReflectSumm: A Benchmark for Course Reflection Summarization.* LREC-COLING 2024.

6. Zheixong Liu, **Mohamed Elaraby***, Yang Zhong*, Diane Litman. *Overview of ImageArg-2023: The First Shared Task in Multimodal Argument Mining.* Argument Mining Workshop @ EMNLP 2023.

7. **Mohamed Elaraby**, Yang Zhong, Diane Litman. *Towards Argument-Aware Abstractive Summarization of Long Legal Opinions with Summary Reranking.* Findings of ACL 2023.

8. **Mohamed Elaraby**, Diane Litman. *ArgLegalSumm: Improving Abstractive Summarization of Legal Documents with Argument Mining.* COLING 2022.

9. Ahmed Magooda, **Mohamed Elaraby**, Diane Litman. *Exploring Multitask Learning for Low-Resource Abstractive Summarization.* Findings of EMNLP 2021.

10. **Mohamed Elaraby**, Diane Litman. *Self-Trained Pretrained Language Models for Evidence Detection.* Argument Mining Workshop @ EMNLP 2021.

11. **Mohamed Elaraby**, Ahmed Zahran. *A Character-Level Convolutional BiLSTM for Arabic Dialect Identification.* WANLP @ ACL 2019.

12. Hassan Alhuzali, **Mohamed Elaraby**, Muhammad Abdul-Mageed. *UBC-NLP at IEST 2018: Learning Implicit Emotion with an Ensemble of Language Models.* WASSA @ EMNLP 2018.

13. **Mohamed Elaraby**, Muhammad Abdul-Mageed. *Deep Models for Arabic Dialect Identification on Benchmarked Data.* VarDial Workshop @ COLING 2018.

14. Muhammad Abdul-Mageed, Hassan Alhuzali, **Mohamed Elaraby**. *You Tweet What You Speak: A City-Level Dataset of Arabic Dialects.* LREC 2018.

15. Hany Ahmed, **Mohamed S. Elaraby**, Mostafa Abdallah, Abdullah Mousa, Sherif Abdou, Mohsen Rashwan. *An Unsupervised Speaker Clustering Technique Based on SOM and I-Vectors for Speech Recognition Systems.* WANLP @ EACL 2017.

16. **Mohamed S. Elaraby**, Mostafa Abdallah, Sherif Abdou, Mohsen Rashwan. *A Deep Neural Network-Based Model for a Computer-Aided Pronunciation Learning System.* SPECOM 2016.

Preprints

1. **Mohamed Elaraby**, Mengyin Lu, Jacob Dunn, Xueying Zhang, Yu Wang, Shizhu Liu. *Halo: Estimation and Reduction of Hallucinations in Open-Source Weak Large Language Models.* arXiv preprint, 2023.

2. **Mohamed Elaraby**, Diane Litman. *ARC: Argument Representation and Coverage Analysis for Zero-Shot Long Document Summarization with Instruction Following LLMs.* arxiv preprint, 2025 (submitted to EACL 2026).

Community Services

•Co-organizer of the Argmining workshop 2026, to be colocated with ACL 2026. •Co-oroganizer of the **ImageArg** shared task.

•Reviewer for LREC 2020 & 2022, ArgMining 2023, ARR 2024-present, BEA 2025, EACL SRW 2026

SELECTED HONORS AND AWARDS

1. **CS50 fellowship** for the academic year 2025-2026 at the department of computer science, the University of Pittsburgh (awarded to two PhD students).

REFERENCES

- Dr. Diane J. LITMAN, *Ph.D, Rutgers University.* (Ph.D advisor)
  Department of Computer Science, University of Pittsburgh
  Email: dlitman@pitt.edu

- Dr. Adriana KOVASHKA, *Ph.D, UT Austin.* (Ph.D committee member)
  Department of Computer Science, University of Pittsburgh
  Email: kovashka@cs.pitt.edu

- Dr. Xiang Lorraine LI, *Ph.D, UMass Amherst.* (Ph.D committee member)
  Department of Computer Science, University of Pittsburgh
  Email: xianglli@pitt.edu

- Dr. Mohsen A. RASHWAN, *Ph.D, the University of Queens.* (MSc thesis supervisor, RDI Chariman)
  Department of Electrical and Electronics Engineering, Cairo University, Giza, Egypt
  Email: mrashwan@rdi-eg.com

Muhammad S. Elhady

- Dr. Sherif M. ABDOU, *Ph.D, University of Miami , Florida.* (MSc thesis supervisor)

  Department of Information Technology, Cairo University, Egypt.

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- Dr. Motaz ELSABAN, *Ph.D, University of California at Santa Barbra.* (Chef Technology Officer at Raisa Energy LLC)

  Department of Information Technology, Cairo University, Egypt.

  Email: `melsaban@raisaenergy.com`

- Dr. Ahmed TAWFIK, *Ph.D, University of Saskatoon.* (Direct Manager)

  Microsoft Advanced Technology Lab, Cairo Egypt.

  Email: `atawfik@microsoft.com`