

# Abrar Abir

+97466238277 | abir@cmu.edu | abrar-abir.github.io

## EDUCATION

CARNEGIE MELLON UNIVERSITY

B.Sc. in **Computer Science**

Concentration in **Security & Privacy**

Expected Graduation in **Dec '25**

## SKILLS

### LANGUAGES

Python • Java • C • JavaScript • SML

### FRAMEWORKS

React • Flask • Tailwind • Nextflow

### TOOLS

Git • Bash •  $\text{\LaTeX}$  • Singularity  
PostgreSQL • ChromaDB • CPLEX

## COURSES

- Natural Language Processing
- Prompt Engineering
- Introduction to Computer Security
- Introduction to Cryptography
- Software Foundations of Security
- Usable Privacy & Security
- Privacy Policy, Law & Technology

## ENGAGEMENT

- **MEMBER, ROBOTICS CLUB**  
Executive Member, Fall 2022  
President, Spring 2023
- **MEMBER, CHESS CLUB**  
Even Organizer, Fall 2021 - Spring 2023
- **5TH PLACE HOLDER**  
Qatar National CTF Competition 2023
- **644TH PLACE HOLDER**  
Putnam Math Competition 2023
- **WINNER, PROGRAMMING CONTEST**  
Qatar Collegiate Programming Contest  
Pizza & Programming Contest
- **MEMBER, SCOTTY SQUAD**  
Co-Designing new UI of Scotty
- **LOGO DESIGNER**  
School of Computer Science, CMU-Q
- **ORIENTATION LEADER**  
Class of 2026 Orientation
- **EVENT VOLUNTEER**  
Arab Collegiate Programming Contest  
MindCraft, CMU-Q Experience
- **MEMBER, CMUQ CRICKET TEAM**  
Runner Up, Education City Tournament

## INTERNSHIP

SIDRA MEDICINE RESEARCH DIVISION, DOHA, QATAR

Full Stack Developer, Biomedical Informatics Core | *Summer 2024 - Summer 2025*

- Developed frontend UI for dashboard with datatable and dynamic plots
- Developed API server and database with Authentication & Authorization
- Designed pipeline for automated file processing, integrity checking and storage

## PUBLICATION

**PROPAGANDIST TECHNIQUE DETECTION IN ARABIC AT ARAI EVAL TASK 01**

Abrar Abir, Kemal Oflazer, Nullpointer at ArAI Eval Shared Task: Arabic propagandist technique detection with token-to-word mapping in sequence tagging, in Proceedings of 2024 ArabicNLP Conference, August 2024, Bangkok, Thailand. arXiv preprint arXiv:2407.01360.

**MULTILINGUAL SUBJECTIVITY DETECTION AT CHECKTHAT! LAB TASK 02**

Md Rafiul Biswas, Abrar Abir, Wajdi Zaghouani, Nullpointer at CheckThat! 2024: identifying subjectivity from multilingual text sequence, In Proceedings of Conference and Labs of the Evaluation Forum (CLEF), September 2024, Grenoble, France. arXiv preprint arXiv:2407.10252.

## RESEARCH

**AUTOMATED SCORING OF ARABIC LANGUAGE WRITING PROFICIENCY**

Qatar National Research Fund | *April 2025 - Present*

A joint research project leveraging NLP & education to build the first automated system in the Arab region to evaluate students' Arabic writing proficiency across multiple dimensions, similar to standardized English exams like IELTS and TOEFL.

**HYBRUSH: A HYBRID UAV BRUSHING SYSTEM FOR PV CLEANING**

Undergraduate Research Experience Program | *Spring 2023 - Spring 2024*

An interdisciplinary research project focused on developing an Unmanned Aerial Vehicle (UAV) system for the dry cleaning and real-time monitoring of photovoltaic (PV) cells, integrating robotics with reinforcement learning.

**SURVEY OF INTERNET-CONNECTED CAMERA SYSTEMS IN QATAR**

Research Assistant | *Spring 2023*

An IoT security research project supervised by Dr. Ryan Riley, focused on assessing the vulnerabilities of internet-connected video camera systems streaming in real time- by analyzing port scanning data, identifying exposed camera systems and cross-referencing security weaknesses with the CVE database.

## MENTORSHIP

**ACADEMIC RESOURCE CENTER, CMU-Q**

Course Assistant | *Spring 2022 - Spring 2024*

Courses: Concepts of Mathematics, Principles of Computing, Fundamentals of Programming & Computer Science, Great Theoretical Ideas in Computer Science, Parallel & Sequential Data Structures & Algorithms

**Held tutoring sessions & coding interviews, and graded assignments.**

## PROJECTS

**CLICKBAIT DETECTION | PYTHON**

Fine-tuned BERT model to detect Clickbait from content title with 86.6% accuracy

**LANGUAGE IDENTIFICATION | PYTHON**

n-gram model for multinomial regression to identify 6 linguistically close languages

**SAFE INTERPRETER | C**

A web server supporting query for safe interpretation of scripting language

**SANDBOX ENFORCER | C**

A runtime enforcement of a system call sandbox policy using Pintools