Abrar Abir

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EDUCATION

Carnegie Mellon University
B.Sc. in **Computer Science**
Concentration in **Security & Privacy**
Expected Graduation in **Fall '25**

SKILLS

Languages
Python • Java • C • JavaScript • SML
Frameworks
React • Flask • Tailwind • Nextflow
Tools
Git • Bash • LATEX • Singularity
PostgreSQL • CPLEX • PIN

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
- **Member, CMUQ Cricket Team**
  Runner Up, Education City Tournament

INTERNSHIP

Sidra Medicine Research Division, Doha, Qatar
Full Stack Developer, Biomedical Informatics Core | *Summer 2024 - Spring 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 ArAiEval task 01
Abrar Abir, Kemal Oflazer , *Nullpointer at ArAIEval 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 Raful 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.

Synergy-Optimized Bid Generation Algorithm in Transportation
Md. Rakibul Hasan, Chefi Triki, Adel Elomri, Abrar Abir , *Advanced synergy-driven algorithms for bid generation in transportation auctions*. Annals of Operations Research (2025), 1-46. DOI: 10.1007/s10479-025-06492-0

RESEARCH

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 Theoritical 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