Mohamed Sobhy

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Career Objective

Innovative and detail-oriented software developer with strong proficiency in programming, embedded systems, and debugging. Seeking to contribute to impactful software projects using my skills in Python, C/C++, and system optimization.

Education

Bachelor of Computer and Communication Engineering,

Alexandria University. ⊡

Work Experience

Network Security Intern   07/2025 – Present

National Telecommunication Institute (NTI) ⊡

- Completed **90 hours of technical training** covering **Network Security** and **Security+ concepts**, including firewalls, encryption, access control, intrusion detection, and secure communication
- Gained hands-on experience in configuring and securing **Cisco network devices**, practicing real-world defense strategies and network hardening techniques
- Attended **30 hours of soft skills sessions**, enhancing **teamwork, communication, and professional presentation**, while building a strong foundation for a career in **cybersecurity and network defense**

IT Intern,   08/2024 – 09/2024

from Alexendria Petroleum Company ⊡

- Assisted in IT department tasks
- Supported infrastructure troubleshooting and system support

AI in Health Care Intern,   02/2023 – 03/2023

Medix (in collaboration with 57357 Hospital) ⊡

- Gained insights into applying AI in real-world health care scenarios
- Participated in practical sessions on medical data analysis

Vulnerability Analysis & Penetration Testing Intern,   06/2025 – Present

Digital Egypt Pioneers Initiative (DEPI) ⊡

- Enrolled in an intensive program covering **ethical hacking**, **penetration testing methodologies**, and **vulnerability analysis**
- Gaining hands-on experience with tools like **Nmap, Burp Suite, Metasploit, Wireshark, Hydra, Gobuster, and John the Ripper**
- Practicing real-world techniques including **network reconnaissance**, **web application exploitation** (XSS, SQLi, CSRF), and **privilege escalation**
- Learning to conduct **threat modeling**, document findings, and write professional **penetration testing reports**
- Strengthening soft skills through team collaboration, problem-solving exercises, and red team/blue team simulations

AI Prompting & Data Analysis Intern   04/2025 – 05/2025

National Telecommunication Institute (NTI) ⊠

- Explored **AI prompt engineering** techniques using tools like **ChatGPT, DeepSeek, Google Gemini**, and **FaceHugger** to generate content, automate tasks, and simulate real-world AI applications
- Applied **data analysis and visualization** using **Orange** and **Power BI** to preprocess datasets, build machine learning workflows, and create interactive dashboards for insightful decision-making

Projects

Husky and Wolf Classification: ⊠

Technologies Used: *Python, TensorFlow, NumPy, OpenCV, Matplotlib.*

Developed a deep learning model using **Convolutional Neural Networks (CNNs)** to classify images of **huskies and wolves**. Implemented **image preprocessing, data augmentation, and transfer learning** for improved accuracy. Trained the model using **TensorFlow/Keras** with **categorical crossentropy loss and Adam optimizer**. Integrated **Grad-CAM visualization** for interpretability and deployed the model for real-world predictions.

Shell Project: ⊠

Designed and implemented a Unix-like shell in C++ using Flex and Bison.

- Developed a **command-line interpreter** supporting command execution, pipelining (|), I/O redirection (<, >, >>), and background execution (&)
- Implemented **process management** using fork() and exec(), with logging for terminated child processes and robust inter-process communication (IPC)
- Designed a **lexer and parser** using **Flex and Bison** to handle user input syntax, and created a **Makefile** for efficient compilation and testing

Multithreaded Conway's Game of Life: ⊠

Technologies Used: *C, POSIX Threads (pthreads), Multithreading, Parallel Computing, Linux/Unix Systems.*

- Developed a **thread-parallel implementation** using pthread_create to boost simulation performance, and applied pthread_barrier for synchronization across threads
- Implemented **Conway's rules** for cell behavior (survival, reproduction, death) and designed a **real-time console visualization** to monitor evolving grid patterns
- Added flexibility through **customizable grid size, thread count, and simulation steps**, allowing dynamic configuration and experimentation

Skills

Technical Skills:

- **Programming:** Python, C, C++, Java
- **Embedded Systems:** AVR ATmega32, Atmel Studio, CodeVision AVR
- **Tools & Software:** MATLAB, Wireshark, Multisim, Proteus
- **Concepts:** Data Structures, Algorithms, Multithreading, Debugging

Core Competencies:

- Algorithms & Data Structures
- Problem-Solving
- Debugging & Troubleshooting

Soft Skills:

- Teamwork and Collaboration
- Time Management
- Adaptability
- Fast Learner

Languages

Arabic:

Native/Bilingual

English:

Proficient (B2)

German:

A2