

Mohamed Hafez

Technical Instructor | Sessional Instructor | Technical Trainer

Computer Science · Data Structures & Algorithms · Java & OOP · AI/ML · Curriculum Design

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Legally authorized to work in Canada for any employer — no sponsorship required. Open PGWP valid to June 2029.

Summary

Technical Instructor with an **M.A. in Information Systems & Technology** and **200+ hours** of instruction delivered across **six institutions**. Taught Data Structures, Algorithms, Java and OOP, C/C++, and AI/ML fundamentals through university tutorials, workshops, and one-on-one instruction, and served as **Teaching Assistant** in Data Visualization and Systems Architecture at York University. Authored 30+ problem sets, 10+ mock examinations, and auto-graded lab series. Brings **5+ years** of current industry practice — ML/NLP research, Spring Boot microservices, and 9 shipped Android applications — directly into the classroom.

Teaching & Technical Skills

Subjects Taught: Data Structures, Algorithms, Java and Object-Oriented Programming, C/C++, Problem Solving, AI and Machine Learning fundamentals, Data Science, Android and Mobile Development, Data Visualization, Systems Architecture

Instruction: lecture delivery, lab and tutorial facilitation, office hours, one-on-one and small-group tutoring, workshop and coding-clinic design, mentoring, differentiated instruction across syllabi

Curriculum & Assessment: curriculum design, problem-set and mock-examination authoring, rubric-based assessment, auto-grading test suites, solution walkthroughs, structured study plans, invigilation, academic integrity

Teaching Tools: Google Classroom, Zoom, Google Meet, GitHub Classroom, Jupyter/Colab, $\LaTeX$, lab repositories, quizzes, handouts

Programming: Python, Java, Kotlin, SQL, C, C++, C#, JavaScript, HTML/CSS, Bash

Technical: PyTorch, TensorFlow, scikit-learn, pandas, NumPy, Transformers, Android SDK, Spring Boot, REST APIs, Git/GitHub, Docker, Linux, AWS, GCP, Azure

Ways of Working: Agile, Scrum, weekly sprints, Trello, Azure DevOps, technical documentation, stakeholder communication

Education & Credentials

York University — M.A. Information Systems & Technology

Sep 2024 – Apr 2026

Thesis: ASC-PIE — An Evaluation Framework for PII-Aware Named-Entity Recognition

Toronto, ON

- Graduate-level focus in Machine Learning, NLP, and Large Language Models. Supervised by Prof. Marin Litoiu, CERAS Lab.
- Served concurrently as Teaching Assistant.

Helwan University — B.Sc. Computer Science & Artificial Intelligence

Sep 2018 – Jun 2022

Excellent with Honors | Ranked 2nd in class | GPA 3.72/4.0

Cairo, Egypt

- Major: Computer Science. Minor: Information Systems. Capstone graded A+. ICPC contestant 2019, 2020, 2021.

Information Technology Institute (ITI) — Mobile Application Development (Android)

Mar 2023 – Jul 2023

Professional certificate, Smart Village

Cairo, Egypt

Teaching Experience

Teaching Assistant — Data Visualization & Systems Architecture

Sep 2024 – Apr 2026

York University

Toronto, ON

- Supported undergraduate instruction in **Data Visualization** and **Systems Architecture**, covering visualization principles, software architecture, object-oriented design, and design patterns.
- Led labs, tutorials, and office hours on assignment requirements, debugging strategy, code quality, and technical problem solving, primarily in person and supplemented by online sessions over **Zoom** and **Google Meet**.
- Marked assignments, midterms, and final examinations using **rubric-based assessment** aligned with instructor standards, maintaining grading consistency across cohorts.
- Supported examination logistics and invigilation; coordinated on academic integrity, student accommodations, and course administration.
- Prepared walkthroughs, worked examples, and student-support materials reinforcing lecture content.

Private Instructor — Computer Science & Software Development

Jan 2023 – Aug 2024

Self-Employed

Cairo, Egypt

- Delivered **200+ hours** of instruction across **40+** one-on-one and small-group sessions in **Data Structures, Algorithms, Java/OOP, AI/ML** fundamentals, and Android development.
- Supported students from **six institutions** — BUE, AUC, AASTMT, GUC, Al-Shorouk Academy, and CIC — adapting materials to differing syllabi, assignment styles, and examination formats.
- Authored **30+ problem sets**, **10+ mock examinations**, solution walkthroughs, and structured study plans.

- Delivered remote instruction and distributed materials, assignments, and feedback through **Google Classroom**, **Zoom**, and **Google Meet**.
- Used timed practice, structured reviews, and feedback follow-ups to improve comprehension, confidence, and examination readiness.

Instructor / Trainer — Workshops & Coding Clinics

Jun 2019 – Jan 2024

CIC, DotPy Academy, Minders, Google Developers Student Club, Most Electronics

Cairo, Egypt

- Delivered **15+ workshops and coding clinics** to **100+ attendees** on Data Structures, C/C++, problem solving, **Java and OOP**, **AI/ML** fundamentals, data science, and introductory Android development.
- Prepared starter repositories, lab sheets, quizzes, printable handouts, and guided exercises, converting workshop material into reusable **GitHub Classroom** repositories and lab templates.
- Delivered sessions both in person and remotely via **Zoom**, **Google Meet**, and **Google Classroom**; mentored learners on course projects, debugging, Git workflows, and software-design habits.
- **Named assignments:** AI & ML, Java & OOP, and Intro to Android with Flutter Instructor at Canadian International College (CIC); AI & ML, Data Science, and C/C++ / Data Structures / OOP Instructor at DotPy Academy; Data Structures Instructor at Minders and at Google Developers Student Club; Java & OOP Instructor at Most Electronics.

Industry Experience

Graduate Researcher — Machine Learning & NLP

Sep 2024 – Apr 2026

York University, CERAS Lab

Toronto, ON

- Built **Python** ML/NLP pipelines and a reproducible evaluation framework benchmarking transformer architectures; developed data-validation and label-quality tooling over a unified 19-entity schema.

Software Engineer — ECM Consultant

Aug 2023 – Sep 2024

BASS, an enterprise content management consultancy

Cairo, Egypt

- Built **Java/Spring Boot** microservices exposing **REST** and **SOAP** APIs on embedded **Tomcat**; implemented enterprise document workflows in **OpenText Documentum** and delivered in **Agile** weekly sprints using **Trello** and **Azure DevOps**.

AI & ML Specialist

Jun 2021 – Aug 2023

DotPy

Cairo, Egypt

- Delivered applied **Python** machine learning solutions end to end — forecasting, segmentation, recommendation, sentiment analysis, and image classification — with **Dockerized** services, **REST/JSON** contracts, and **Agile** weekly sprint delivery.

Freelance Android Developer

Jul 2019 – Jun 2024

Self-Employed / Client Projects

Remote — Cairo, Egypt

- Delivered **9** Android applications end-to-end in **Kotlin** and **Java** (**MVVM/MVP**, **Retrofit**, **Room**, **Firestore**); published **4** to **Google Play** with full release ownership including signing, staged rollouts, and crash/ANR triage.

Instructional Materials Developed

Data Structures Lab Series | C/C++, Java, GitHub Classroom

2019 – 2026

- Authored **6** core topic modules (arrays, linked lists, stacks, queues, trees, graphs) with **12+** lab exercises, **30+** auto-grading test cases, complexity notes, and full solution walkthroughs.

Intro AI/ML Notebooks & Assessments | Python, Jupyter/Colab, scikit-learn

2020 – 2026

- Built **10+** teaching notebooks with answer keys covering classification, regression, model evaluation, and introductory NLP and computer vision, explaining accuracy, precision, recall, and F1 alongside data-quality practice.

Android Teaching Mini-Apps | Kotlin, Java, Retrofit, Room

2021 – 2024

- Built **3+** demonstration applications covering networking, local storage, architecture patterns, and offline behaviour, packaged as starter templates with guided exercises.

Certifications, Awards & Languages

Certifications: Mobile Application Development (Android) — ITI, 2023; AWS Machine Learning Foundations — Udacity, 2022;

Certified Ethical Hacker (CEH) Training Programme — Inspire Academy, 2022; Artificial Intelligence Foundations — DotPy, 2021

Awards: Excellent with Honors, ranked 2nd in graduating class, GPA 3.72/4.0; Capstone Grade A+; ICPC Contestant 2019, 2020, 2021

Leadership: Leader, Academic Committee, Minders Student Activity (2018–2022); Member, Technical Committee, Microsoft Student Partner Tech Club; Instructor, Google Developers Student Club

Languages: English (Professional proficiency), Arabic (Native)