

MAHMOUD BADAWY

SOFTWARE ENGINEER

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SUMMARY

Aspiring software engineer with practical experience in full-stack development and AI automation projects. Familiar with building backend services, RESTful APIs, and responsive frontends. Hands-on experience with n8n for workflow automation and integrating AI services. Strong foundation in data structures, algorithms, and object-oriented programming. Eager to contribute to real-world projects, learn quickly, and grow in dynamic development environments.

EDUCATION

Bachelor of Computer Science & Artificial Intelligence

- Graduated: June, 2025
- Cumulative Grade: Good

WORK EXPERIENCE

AI Automation Engineer – Brooklyn Business School

Jun 2025 – Oct 2025

- Designed and implemented AI-powered workflows using n8n to automate business processes.
- Integrated APIs and AI/LLM services to reduce manual work and improve efficiency.
- Built automation pipelines for data processing, notifications, and reporting.
- Developed backend logic and scripts to orchestrate workflows.
- Ensured reliability through error handling, conditional logic, and retries.

Full-Stack Developer (Freelance) – Upwork

June 2024 – Present

- Developed backend services and RESTful APIs for client projects using C#/.NET and Java Spring Boot.
- Built responsive frontends using React.js, HTML, CSS, and Bootstrap.
- Integrated frontend and backend components for dynamic and interactive web applications.
- Collaborated with clients to analyze requirements and deliver functional solutions.
- Maintained code quality through version control (Git/GitHub) and basic unit testing.

TECHNICAL SKILLS

- Programming Languages: C, C++, C#, Java, JavaScript, Python, SQL
- Backend Development: ASP.NET Core, RESTful APIs, Java Spring Boot, JWT Authentication
- Frontend Development: React.js, HTML, CSS, Bootstrap, SCSS/SASS
- AI & Automation: n8n Workflow Automation, AI/LLM API Integration, Business Process Automation
- Database Management: SQL Server, MySQL, MongoDB (NoSQL)
- Software Concepts & Tools: OOP, Data Structures & Algorithms, Design Patterns, SOLID, SDLC, Git/GitHub, Unit & Integration Testing, Agile, Docker (Basic)

SOFT SKILLS

- Problem Solving: Able to analyze problems and implement effective solutions.
- Collaboration & Teamwork: Experienced in working with clients and team members to deliver functional solutions.
- Adaptability: Quick learner, comfortable with new technologies and tools.
- Time Management: Able to prioritize tasks and meet deadlines efficiently.
- Communication: Explains technical concepts clearly to non-technical team members
- Attention to Detail: Ensures code quality, error handling, and workflow reliability.

PROJECTS

Graduation Project (🌐 tabook)

- Developed an all-in-one digital library with reading, listening (Text-to-Speech), and community interaction features.
- Built personalized book recommendations using AI based on user behavior and activity history.
- Implemented AI-based content moderation to filter inappropriate posts automatically.
- Designed dashboards for users and admins: reading stats, book/user management, and content moderation.
- Worked with a dataset of ~12,000 books; ensured multilingual support and responsive design across devices.
- **Technologies & Tools:** React.js, C#/.NET, Python, AI/ML (Text-to-Speech, Recommendation System, NLP), SQL Server

Online Library System

- Developed a web-based library management system for books, patrons, and borrowing records with a strong focus on security and data protection.
- Built RESTful APIs using .NET Core for CRUD operations, integrated JWT authentication, and role-based access control.
- Implemented password hashing and salting (BCrypt) to securely store user credentials.
- Applied encryption techniques to protect sensitive data both in transit and at rest.
- Ensured secure access control and route guarding for all user roles.
- **Technologies & Tools:** React.js, HTML, CSS, JavaScript, C#, .NET Core, SQL Server, JWT, BCrypt

Big Data Football Scores Analysis

- Performed data analysis on live football scores using Python to extract insights from match datasets.
- Cleaned, transformed, and explored structured football score data to identify patterns and trends.
- Visualized key match statistics (e.g., goals, score distributions) to support analytical findings.
- Wrote Python scripts to process datasets and generate informative charts and summaries.
- **Technologies & Tools:** Python, Pandas, NumPy, Matplotlib/Seaborn (or similar data visualization libraries)

AI Vision Project – PROJECT-AI

- Developed an AI-powered computer vision application using Python for real-time face detection and processing.
- Built GUI and camera interaction modules to capture and process live video streams.
- Trained and integrated a deep learning model (.h5) to detect facial features and classify inputs.
- Utilized datasets and Python libraries to enhance model accuracy and performance in real environments.
- **Technologies & Tools:** Python, OpenCV (or similar vision libs), Deep Learning (model training/inference), GUI development

AI Call Center Automation Bot

- Built an AI-powered automation workflow to simulate a call center support bot for handling customer inquiries.
- Integrated a structured data source (Google Sheets / Excel) containing full academy information to respond accurately to client questions.
- Automated responses for customer details, courses, schedules, pricing, and general inquiries.
- Used n8n workflows with API and AI/LLM integration to process queries and generate intelligent responses.
- Reduced manual workload by providing instant, consistent, and automated customer support.
- **Technologies & Tools:** n8n, AI/LLM APIs, Google Sheets/Excel, Workflow Automation, API Integration