# Dor Alagem

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## PROFILE

Computer Science student (GPA 95) with hands-on experience building Python-based backend systems, distributed applications, and automation workflows. Developed end-to-end projects involving real-time communication, algorithmic problem solving, and scalable system design. Strong interest in backend engineering, infrastructure, and software development.

## SKILLS

**Programming Languages**
Python, C, C++, SQL

**Backend & Systems**
REST APIs, Distributed Systems, MQTT, Automation Workflows, System Validation

**Data Analysis**
NumPy, Pandas, Scikit-learn

**Cloud & Tools**
AWS, Git, GitHub, VS Code, PyCharm

## EDUCATION

**B.Sc. in Computer Science** 04/2024 – 10/2026
*HIT - Holon Institute of Technology*
- **GPA: 95**
- **Distinguished Coursework:** Machine Learning (100); Object-Oriented Programming (100); Operating Systems (90); Computer Networks (94)

## PROJECTS

**Smart IoT Irrigation System**
*Technologies:* ***Python, MQTT, JSON***
- Designed and implemented a distributed IoT system for **real-time environmental monitoring** and sensor coordination.
- Built a multi-node communication architecture enabling **telemetry exchange** between sensor units and a central management service.
- Developed a real-time dashboard with **CustomTkinter** to visualize soil moisture and temperature data.
- Structured the system with modular components to improve **scalability** and maintainability.
- Validated communication reliability and **message integrity** across distributed nodes under simulated real-time conditions.

**Autonomous Path Planning Visualizer**
**Technologies:** ***Python, NumPy, Tkinter, A* Algorithm***
- Developed an autonomous path-planning simulator using the **A* algorithm** to compute optimal collision-free routes.
- Implemented obstacle avoidance logic under **dynamic constraints** and configurable safety margins.
- Built an interactive **Tkinter-based visualization tool** to demonstrate route decisions and edge-case behavior.
- Optimized computation performance using **NumPy** for efficient matrix operations and path calculations.

## AWARDS

**Dean's List**, HIT (2024) – Awarded for academic excellence and consistent high performance.