

# Bilal Al Asha

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AI & Software Developer | Machine Learning Enthusiast

Phone: +963 938 622 264 | Syria – Damascus

Email: [bilal.alasha@gmail.com](mailto:bilal.alasha@gmail.com)

LinkedIn: <https://www.linkedin.com/in/bilal-al-asha>

GitHub: <https://github.com/Bilal-Alasha>

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## Summary

Final-year Information Technology Engineering student specializing in Artificial Intelligence and Machine Learning, Built and simulated a genetic algorithm for feature selection and a VFH robot navigation system from an IEEE paper. Taught AI concepts in a bootcamp while mentoring interns on GPT-based story generators and TTS pipelines. Proficient in Python and scikit-learn. Interested in entry-level roles in AI, automation, and data-driven software development, with a focus on learning production-level engineering practices such as APIs, deployment, and scalable AI systems

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## Technical Skills

- **Languages:** Python, C++, JavaScript, HTML, CSS
  - **AI/ML Tools & Libraries:** NumPy, Pandas, Matplotlib, Scikit-learn.
  - **Platforms & Tools:** Git, Jupyter Notebook, Docker, SQL, MongoDB, VS Code, Linux
  - **Concepts:** Machine Learning, Neural Networks, Genetic Algorithms, Data Privacy
  - **Soft Skills:** Problem-solving, Communication, Research, Team Collaboration
  - **Languages:** English (fluent), Arabic (native)
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## Work Experience

### AI Developer and Program Instructor

EARTech (Remote, Part Time), Turkey, Istanbul | July 2025 – Present

- Served as an AI instructor/co-instructor in an AI & Cybersecurity training bootcamp.
- Guided interns in building AI-driven applications, including workflow-based systems using Python and cloud tools
- Supervised and supported the development of an AI applications that is :
  - \* AI-powered interactive story generator using GPT models
  - \* Image generation and text-to-speech integration
- Provided feedback, support, and technical explanations tailored to different skill levels.

## Research and Development Intern

Rachis Systems, Damascus, Syria | Sep 2024 – Dec 2024

- Worked on innovative solutions in AI and robotics, including VFH and genetic algorithms.
  - Implemented and tested AI algorithms for robotics and optimization problems.
  - Used Python, MATLAB, and simulation tools to apply and test academic research.
  - Developed and debugged robotic path planning and data anonymization algorithms.
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## Projects

### Vector Field Histogram Simulation

- **GitHub:** <https://github.com/Bilal-Alasha/simulating-the-VFH-algorithm>
- Applied the IEEE paper 'Vector Field Histogram for Fast Obstacle Avoidance' (1991).
- Simulated robotic path planning in Python using NumPy, Pandas, and Pygame.
- Developed a full simulation of mobile robot navigation; code available on GitHub.

### California Housing Machine Learning Project

- **GitHub:** [https://github.com/Bilal-Alasha/Applying-regression-classification-and-clustering-ML\\_Project\\_4th\\_year](https://github.com/Bilal-Alasha/Applying-regression-classification-and-clustering-ML_Project_4th_year)
  - this project explores the California Housing dataset using a range of ML techniques including regression, classification, and clustering.
  - Implemented baseline Linear Regression and enhanced models using Ridge, Lasso, and polynomial features. Evaluated performance using RMSE, MAE, and  $R^2$  metrics.
  - Built binary and multi-class classifiers to categorize housing prices using Logistic Regression, Decision Trees, and Random Forests. Assessed models with accuracy, precision, recall, F1-score, and confusion matrices.
  - Applied PCA for feature reduction and KMeans clustering ( $k=3,4,5$ ). Visualized clusters in PCA space and mapped them geographically across California.
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## Competitions

- Participated in ACM SCPC for 4 consecutive years using C++ as the main programming language to solving the problems.
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## **Education**

### **B.Sc. in Information Technology Engineering**

Syrian Virtual University | Damacusus | Final year | Expected Graduation Dec/2026

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## **Certifications**

- AI & Cybersecurity Internship – EARTeach (August 2025)

- EF SET English Certificate – C2 Proficient , available on my LinkedIn page

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