Real Time College

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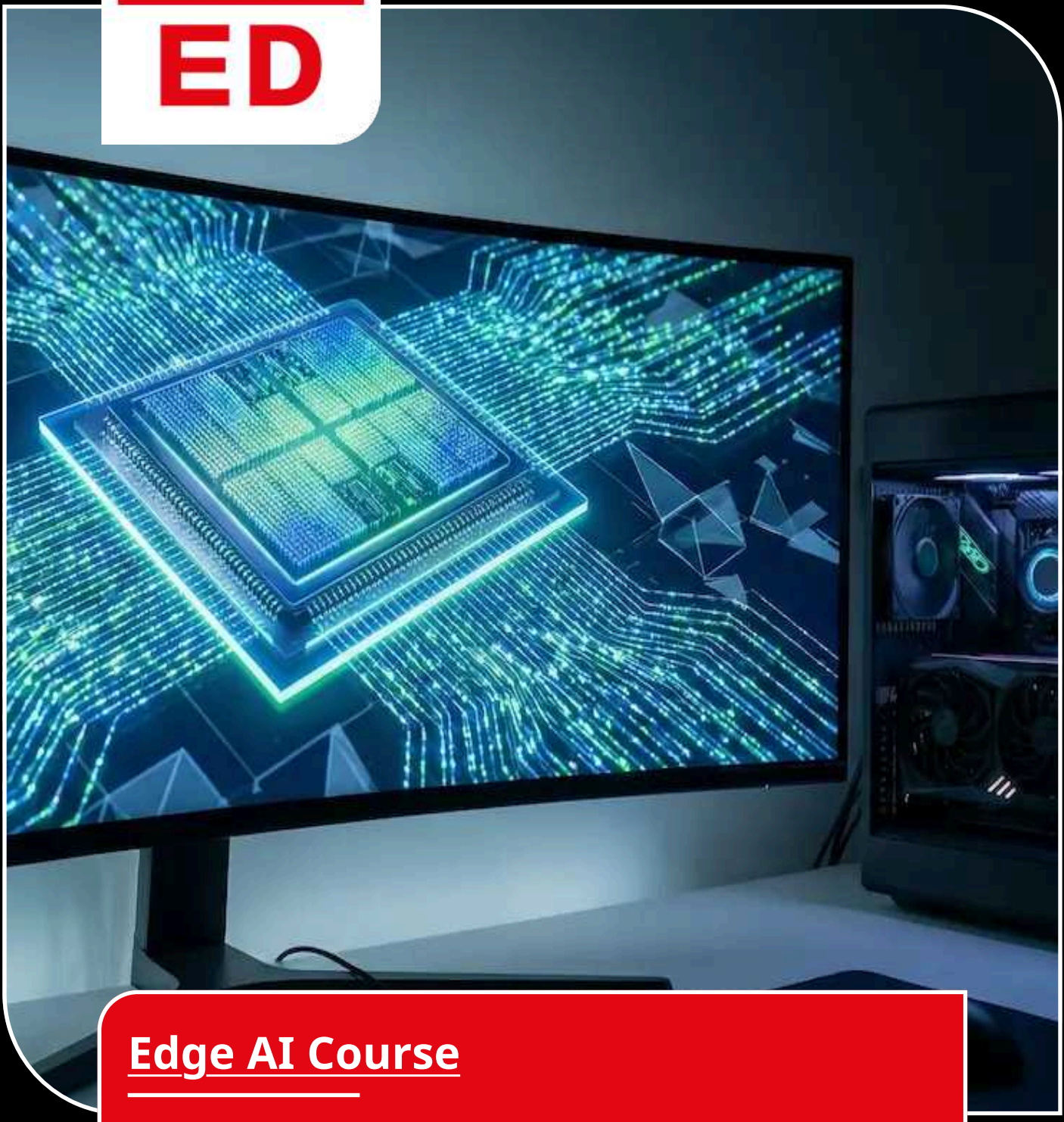

Edge AI Course

Duration: **25** Hours | **Hands-On Training:** 65%

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ABOUT REAL TIME GROUP

Experience the Industry. Master the Technology.

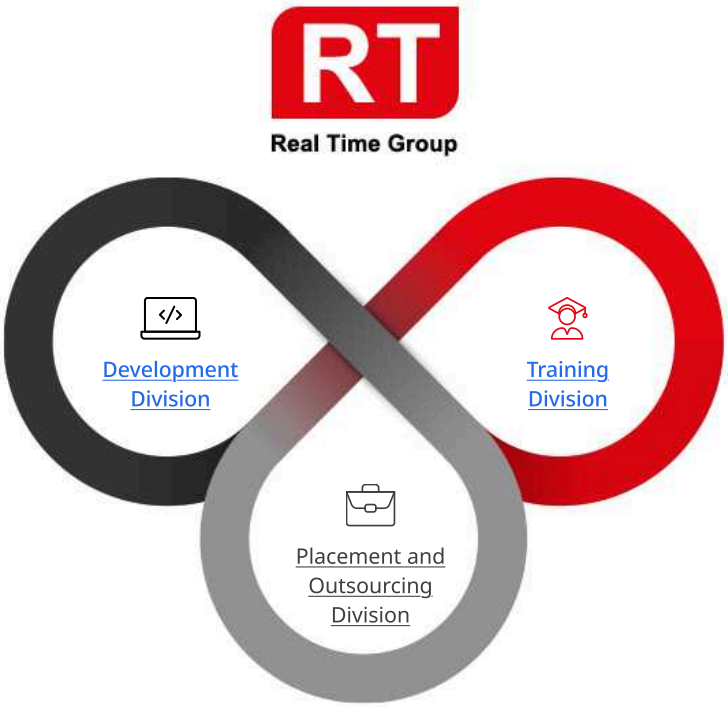
Real Time Group, established in 2007, is a technology company specializing in advanced software and hardware engineering solutions across RT Embedded Systems, Embedded Linux, FPGAs, Artificial Intelligence, Machine Learning, Computer Vision, DevSecOps, Cloud technologies, and Full Stack development.

The company combines deep hands-on development expertise with professional training programs designed to prepare engineers for the high-tech industry. Over the past two decades, Real Time teams have contributed to complex engineering projects for leading organizations including Apple, NVIDIA, Intel, the Israel Defense Forces (IDF), Rafael Advanced Defense Systems, Israel Aerospace Industries (IAI), Elbit Systems, and ELTA Systems.

This industry-driven experience forms the foundation of the Real Time training ecosystem.

OUR THREE-DIVISION ECOSYSTEM

Working together to launch your career:



RT-ED: TRAINING DIVISION

RT-ED provides advanced professional training programs focused on practical engineering skills. Courses are project-based and utilize industry-standard development environments, cloud platforms, and modern development tools.

Participants gain hands-on experience through structured labs, guided exercises, and industry-grade final projects.

DEVELOPMENT DIVISION

The Development Division delivers engineering and software development services across embedded systems, AI technologies, cybersecurity, and cloud infrastructures.
Through interaction with development teams and real-world workflows, students gain exposure to modern engineering practices and production-grade environments.

PLACEMENT AND OUTSOURCING DIVISION

Real Time Group provides structured placement and internship opportunities that support graduates in transitioning into the high-tech industry.

Students may participate in internships within active development teams, gaining real-world project experience under the guidance of experienced engineers and mentors.

COURSE OVERVIEW

The **Edge AI & Final Project course** provides advanced, hands-on training in designing, optimizing, and deploying intelligent Edge AI systems on the **NVIDIA Jetson Orin platform**.

This course bridges the gap between:

- Computer Vision
- CUDA acceleration
- ROS 2 robotic systems
- Embedded Linux
- Hardware–software integration

Participants will build a complete production-ready Edge AI system — from low-level hardware interaction to accelerated AI inference and system deployment.

The course emphasizes:

- Real-time AI pipelines
- GPU-accelerated inference
- Sensor integration
- System optimization
- Reliability & stability
- End-to-end system architecture

The course culminates in a **Capstone Industry-Level Project**, where participants design and implement a full Edge AI solution under real-world constraints.

WHO SHOULD ATTEND\ PREREQUISITES

Who should attend:

- Embedded AI Engineers
- Robotics Engineers
- Autonomous Systems Developers
- Computer Vision Engineers
- C++ Developers transitioning into Edge AI

Prerequisite/Advantage:

- C for Embedded Systems
- Modern C++
- Linux Administration
- Real-Time Concepts
- Embedded Linux
- OpenCV (C++)
- CUDA (C++)
- ROS 2

COURSE CURRICULUM

Below is a breakdown of the core modules covered in this course, along with their descriptions and duration.

Select a module to view detailed content.

MODULE NAME	DESCRIPTION
Day 1 **Edge AI Fundamentals & Platform Architecture**	• What is Edge AI vs Cloud AI • System-level architecture of intelligent edge devices • NVIDIA Jetson Orin architecture (CPU, GPU, memory, accelerators) • Power modes and performance profiles • Real-time constraints in embedded AI systems
Day 2 **System Setup & Environment Configuration**	• Jetson OS installation & configuration • SSH remote access • Package management and dependency control • CUDA, cuDNN & TensorRT setup • Performance monitoring tools (tegrastats) Focus: Building a stable and optimized development environment.

MODULE NAME	DESCRIPTION
Day 3 Hardware–Software Integration	• GPIO fundamentals • Digital I/O control • Hardware abstraction layers • Interfacing sensors and actuators • Timing constraints and signal integrity Hands-on examples: • LED control & hardware triggering • Event-driven processing
Day 4 Accelerated Vision & AI Pipelines	• OpenCV optimization on Jetson • CUDA acceleration concepts • TensorRT inference optimization • Memory management strategies • Pipeline latency analysis Focus: Real-time inference under resource constraints.
Day 5 System Reliability & Maintenanc	• Logging & monitoring • Resource management (CPU/GPU/memory) • Thermal considerations • Stability under continuous workload • Deployment best practices

MODULE NAME	DESCRIPTION
Day 6 Capstone Final Project – Industry-Level Implementation	Participants will design and implement a complete Edge AI system that includes: • Sensor input (camera or external device) • Real-time AI processing • Hardware interaction (GPIO or actuator control) • ROS 2 integration (optional for robotic systems) • GPU-accelerated inference • Performance measurement & optimization Project requirements: • Modular architecture • Real-time constraints • Performance benchmarking • Clean code & documentation • System demo under realistic operating conditions

MEET YOUR INSTRUCTOR

ALEX SHOYHIT

Head of Machine Learning Departments

Alex holds a B.Sc. in Information Systems and an M.A. in Electrical and Electronic Engineering. As a ML Engineer at RTG, Alex specializes in the field of artificial intelligence, applying over 13 years of experience in project development, management, and transitioning from development to production in various domains such as Linux Embedded. Throughout his career, Alex developed his expertise working with the integration of Machine Learning and Deep Learning in Computer Vision & Data Analysis field.

What Do The Course Graduates Say?

Grisha
Data Science
Course Graduate

I highly recommend the Data Science course at RTG College for anyone looking to enter the field. The small groups, personal attention, and emphasis on real projects gave me a significant advantage in job interviews.

Binyamin
Data Science
Course Graduate

Within a few months, I acquired practical tools that enabled me to integrate into my first position at a tech company, with a significantly increased salary. The industry-experienced instructors and practical projects made all the difference.

Shaked
Full Stack Course
Graduate

The Tools I Gained From The Course Are Among The Most Up-To-Date In The Development Market Today. What Gave Me Peace Of Mind Was Knowing That At The End Of The Course, A Professional Placement Company Would Support Me In Entering The Field

MISCELLANEOUS

• Course opening is contingent upon minimum enrollment.

• Registration fees are non-refundable except in cases where the college does not open the course.

• All content and implications of the syllabus are subject to college regulations.

• The college informs students that there may be changes in course content and scheduling.

• The college commits to notifying students of any changes.

• The college reserves the right to modify course content at its sole discretion.

Thank You!

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