



# ALPHA PILOT

## The Lockheed Martin AlphaPilot Innovation Challenge

In partnership with Drone Racing League (DRL) and NVIDIA

AlphaPilot is the first large-scale open innovation challenge of its kind focused on advancing artificial intelligence (AI) and autonomy.

Participants will be challenged to design AI capable of piloting fully autonomous drones through professional drone racing courses. We'll hold races during DRL's new Artificial Intelligence Robotic Racing (AIRR) Circuit, starting next year. The grand prize winner will walk away with \$1 million. The first AlphaPilot team to best a human-piloted drone in a head-to-head race will walk away with \$250,000.

### What are you asking participants to do, exactly?

We are challenging teams to develop an AI-enabled framework, powered by the NVIDIA Jetson platform for AI at the edge, that can navigate a fully autonomous drone through complex, multi-dimensional racing courses—without any pre-programming or human intervention.

Teams will develop AI that has an accurate representation of a drone operator's goals and desires, so it can make inferences about current and future needs, limiting the need for explicit direction.

This is a competition of AI quality—all other racing variables, including the drone hardware, are controlled.

Teams won't be going alone! Lockheed Martin engineers and AI specialists will serve as mentors to Challenge teams. We're also partnering with DRL, the global professional circuit for drone racing; DRL will supply Challenge teams with standardized drones, and their drone experts will collaborate with teams and Lockheed Martin technical mentors throughout the multi-year partnership. NVIDIA, the leader in AI computing, will provide contestants with a special discount on the NVIDIA Jetson, the most advanced platform for AI-powered autonomous machines.



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#### ABOUT LOCKHEED MARTIN

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 100,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. This year, the company received three Edison awards for ground-breaking innovations in autonomy, satellite technology and directed energy.

#### ABOUT DRONE RACING LEAGUE

DRL is the professional drone racing circuit for elite FPV pilots around the world. A technology, sports and media company, DRL combines world-class media and proprietary technology to create thrilling 3D drone racing content with mass appeal.



## Who should apply to participate?

We are targeting U.S. undergraduate and graduate students. However, the competition is open to drone enthusiasts, coders and technologists of all ages around the world. If you believe autonomy will shape our future, now's your chance to help create that future.

This is a great opportunity for some of the world's most creative minds to go head-to-head and show what their technologies can do.

Teams may enter independently or as representatives of a university or business entity. Teams may also pursue sponsors to assist with computing infrastructure and travel costs.

## What will teams demonstrate that makes this prize-worthy?

The AlphaPilot Innovation Challenge will push the boundaries of AI "edge computing" far beyond current achievements. It takes humans years to master high-speed, precision drone flight. We're aiming to exceed human capabilities in under two years.

## What are the prizes?

The grand prize winner will take home \$1 million. We'll also award additional prizes to top-performing Challenge teams at the end of the 2019 and 2020 seasons. The first AlphaPilot team to beat a human-piloted drone will take home an extra \$250,000.

## What is the timeline?

We'll start accepting entries later this year. You can sign up at [lockheedmartin.com/alphapilot](http://lockheedmartin.com/alphapilot).

## Why is Lockheed Martin doing this?

For more than 100 years Lockheed Martin has been redefining flight—from the fastest speeds, to the edge of space, to unmatched maneuverability and stealth, we've reimaged what's possible.

It's important for us to keep innovating, to keep pushing forward in developing smarter, faster, safer AI. After all, our success depends on our ability to create new business models, product offerings and disruptive technologies that help our customers accomplish their missions.

Our customers are often looking decades into the future to determine their needs, so we must do that too—thinking about next-generation products, as well as generation-after-next products.

## Why drones?

Drone racing is a futuristic sport, and a big draw for millennials and K-12 students with an interest in technology—many of whom we hope will become future STEM professionals.

At Lockheed Martin, we recognize that we play an important role in helping develop a workforce with the skills to compete in a 21st century high-tech economy, so we're always looking for innovative ways, like the AlphaPilot Innovation Challenge, to incorporate our STEM-engagement and talent-recruitment efforts into our global technology strategy.

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Learn more: [www.lockheedmartin.com/alphapilot](http://www.lockheedmartin.com/alphapilot)