

# FORMULA STUDENT

Institution of  
**MECHANICAL  
ENGINEERS**

## FORMULA STUDENT – ARTIFICIAL INTELLIGENCE (FS-AI)

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SUPPORTERS:





*Rapid developments in CAV technology, and the new business models which will underpin their use, could fundamentally change the way people and goods move around in the future, offering huge potential benefits in safety, efficiency and productivity. AI is a critical enabler of this future, and FS-AI will help nurture talent on which the UK's industry, from exciting young start ups to large corporations, will help realise this future for society.*

Simon Shapcott, Head of Research & Development, Centre for Connected & Autonomous Vehicles

#### ADS-DV SPECIFICATION

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WHEELBASE : **1530mm**  
FRONT TRACK : **1201mm**  
REAR TRACK : **1201mm**  
OVERALL WIDTH : **1430mm**

OVERALL LENGTH : **2814.6mm**  
STATIC CASTER : **6**  
STATIC CAMBER : **2**  
TYRES : **SAE FS AVON 7.2/20.0-13**

DRIVEN WHEELS : **4WD**  
DIFFERENTIALS : **OPEN DIFF**

If you are interested in purchasing a an ADS-DV, please get in touch to discuss pricing.

Run by the Institution of Mechanical Engineers (IMechE), Formula Student (FS) has provided a platform for University students to apply engineering theory in a real world, real project scenario for over 20 years. FS requires student teams to design and build a complete race car and compete against other teams from around the world at Silverstone each year.

Formula Student – Artificial Intelligence (FS-AI) has been introduced to challenge student teams to develop an AI driver capable of controlling a purpose designed FS car through a series of racing challenges. There is also a series of 'static' event categories, including the requirement for the students to also consider Real World Autonomous scenarios. The competition is designed to evolve to keep pace with the skills requirements of the UK AI sector. FS produces some of the best 'industry ready' engineering graduates in the world. FS-AI will now extend this into the world of autonomy, producing software engineers ready to meet the ever growing demand for CAV skills to support vehicle manufacturers and their supply chain.

Students have the option to design and build their own autonomous racer, similar to the traditional format of Formula Student, whilst also developing AI code.

Alternatively, for those teams who prefer to focus on the task of creating control algorithms rather than the mechanical engineering of a car, a prototype a prototype vehicle, the ADS-DV, has been developed by the IMechE with funding from the Centre for Connected & Autonomous Vehicles (CCAV) via Innovate UK. FS-AI is the first competition of its kind to offer this alternative, lowering the barrier to entry for Universities for whom resources and budget would otherwise prevent participation. The ADS-DV allows students to create control algorithms to work with their chosen AI hardware in order to complete a set of pre-defined AI missions.

The ADS-DV will be available for low-volume manufacture from winter 2018, for Universities or even as a low cost AI-testing resource for businesses.

If you are interested in purchasing a vehicle platform, please get in touch to discuss pricing.

## OPTION 1

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Students convert an existing FS car, originally designed and manufactured by their University's FS team to an AI platform

Students compete in FS-AI static events; Business Plan Presentation, Engineering Design and Real World Autonomous

Students compete in FS-AI dynamic events; Acceleration Test, Skid Pad and TrackDrive

## OPTION 2

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Students purchase the ADS-DV platform and select their own AI hardware and software

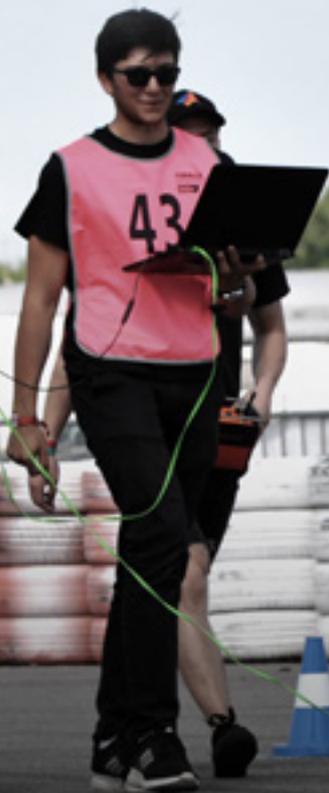
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*In the future, space will be shared between humans and machines. FS-AI will enhance the future of automotive AI using racing as a testbed.*

Andrew Deakin, Chairman, Formula Student



Are you a University representative interested in entering FS-AI? Are you interested in purchasing an ADS-DV as a means of participating?

Is your business in need of people with CAV skills? Are you interested in understanding more about FS-AI and how you can be involved?

Do you represent a Government department or NGO with a stake in CAV innovation?

Or maybe you just want to know more about FS-AI? We want to hear from you, please contact:

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