

# Meet the engine of automotive innovation

Lenovo™

If you're looking for a winning record in racing innovation and performance, where do you go? Daytona Beach? Monaco? The Autobahn?

Look again—at **University of Wolverhampton Racing (UWR)** in Telford, England, a trailblazing U.K. university program that's putting Lenovo® ThinkStation® solutions to work transforming the automotive industry.

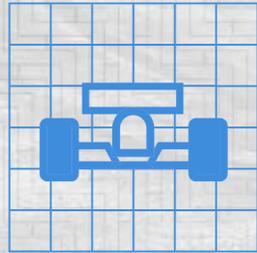




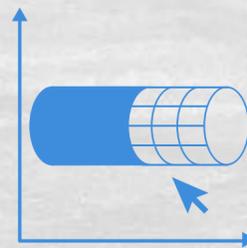
UWR is innovating the processes of car manufacturing and racing from the ground up. Working out of next-generation automotive workshops powered by Lenovo ThinkStation workstations, four UWR racing teams design and assemble every component of their cars. Among them is the Formula Three (F3) team, the first and only university-based team to enter the F3 Cup Championship. This successful team is regularly competing in professional races—and winning.

Race by race, UWR innovations are becoming the new industry standards, attracting the attention of Aston Martin, Rolls Royce, and Formula One racing teams. These companies know talent when they see it: they recruit students on their visits to UWR, and now, every single graduate has a real-world job in the automotive industry.

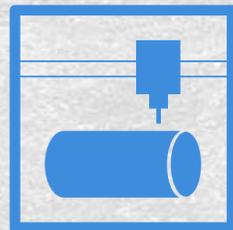
UWR takes a data-driven approach to automobile design and racing, including:



**Running simulations:** Programs like MATLAB®, Simulink®, and the Lotus Suspension Analysis SHARK module help students understand the kinematic effects of changes in the chassis and suspension, letting them experiment in simulations before committing to a design.



**Designing new parts from scratch:** Using SOLIDWORKS®, ANSYS®, and Geomagic®, participants build their own auto components, combining techniques and materials in ways that are completely new to the race track.



**Printing new components:** Participants study powder morphology so they can bring components to life with a 3D metal printer—and scan them back into the system with a 3D laser scanner.



**Performing detailed data analysis:** Every car has built-in software recording everything from lap times to component performance. UWR students use race data applications to analyze past races and optimize for the future.



Until recently, UWR hadn't standardized their workstations, and maintenance and reliability issues were slowing them down. Given the program's varied workloads and fast pace, every workstation in every lab had to run every application, so students could maintain a continuous workflow wherever they were.

Now, UWR has equipped its labs with ThinkStations—gaining reliability, flexibility, scalability, and world-class graphics and compute performance. With a failure rate of less than a quarter of a percent, the systems have integrated seamlessly into the program's work, keeping up with everything from heavy data analysis to component design and printing.



ThinkStation  
P300 Series



ThinkStation  
P500 Series



ThinkStation  
P900 Series





Between running race simulations and designing, rendering, and printing new components, UWR needs world-class graphics to keep up with their work.

NVIDIA® Quadro® graphics, which power all Lenovo workstations, have the ISV certifications and stable drivers to keep their SOLIDWORKS, Geomagic, and ANSYS projects running smoothly. For their most graphics-intensive work, participants can rely on the ThinkStation P900 Series, the only workstations able to accommodate three NVIDIA Quadro P6000 cards to deliver the ultimate in graphics performance.



UWR has secured a worldwide reputation for automotive innovation and expertise. The ideas and machinery of the F3 team have even persuaded some F1 teams to outsource design and manufacturing to UWR, with the F3 team securing a valuable collaborative contract with the Morgan Motor Company.

Relying on Lenovo ThinkStations with NVIDIA GPUs to power their ingenuity, this professional construction and racing crew is taking the automotive industry to the next level.



# Lenovo ThinkStation Workstations



» NVIDIA® Quadro® graphics sustain your most graphics-intensive applications

Lenovo™



## ThinkStation P300 Series

- » Exceptional reliability and performance at a remarkable value
- » The only workstation awarded the GREENGUARD® energy efficiency certification
- » Intuitive port customization paired with effortless mobility



## ThinkStation P500 Series

- » Versatile and flexible, with the ability to add more drives
- » Unmatched reliability for your mission-critical workloads
- » Tri-channel cooling ensures smooth performance even while running heavy workloads



## ThinkStation P900 Series

- » The only workstation able to support three NVIDIA Quadro P6000 cards for unprecedented graphics performance
- » Up to 1TB of 2400Mhz DDR4 memory to give you a faster response
- » ISV certified for your most demanding applications

To explore our full line of workstations and learn how ThinkStations can empower your work, visit [www.thinkworkstations.com](http://www.thinkworkstations.com).