

Q&A - MTI Future of Automotive Education and Skills Webinar



What skills do I need to look forward to studying to move into connected autonomous vehicle?

MTI: Industry experience of working in automotive innovation, design and development is key however, software development and computer science is also a valid background if you are interested in the CAV field. As a second-year university student, what advice can you give in the current situation with respect to being ready to these new challenges as well as placement search?

Lisa Rowles, HORIBA MIRA: In the current COVID Era it is more important than ever to be agile and flexibility. Seek opportunities to demonstrate your interest in a particular field. Use the likes of LinkedIn to monitor what is going on in industry and follow key organisations that will provide industry info e.g. SMMT, IMechE. Placements may not always be advertised, so make direct contact with organisations of interest and show a link between your key study areas, areas of interest and express why the particular organisation is interesting to you.

What skills does the automotive industry expect from the fresh postgraduate automotive engineers?

MTI: To have some experience in the field will put you at the top of the list, but as we all know experience in the work field is hard to find. So next best thing is to have projects that show your interest in the area you're interested in. if you can show enthusiasm and passion for a subject the employer will pick you over others.

How has Covid affected your Apprenticeship/Traineeship programme and work experience opportunities?

MTI: We have seen a continued growth at the MTI and as businesses get set up to meet Covid guidelines we feel the placements will follow. Work experiences have been reduced with Covid no doubt, but funding is now available via our FE partner to help support trainees get to work experiences. There will also be more requirements for work experiences with T Levels coming in and business are going to have to start answering the call for this. Please contact us to find out more.

I am a master student in computational engineering, now about to start my master thesis. I would still like to make a career in the automotive industry, what do you think is the most useful skill to have/learn looking into the future of automotive industry?

MTI: Try focusing some of your projects on emerging technology to give you a head start, employers look for industry and practical experience so focus a project on a relevant project.

Lisa Rowles, HORIBA MIRA: Speak with employers about your master's thesis and seek opportunities to share your thesis learning with them. Be broad in your areas of application and be open to opportunities that may not be within your specific area of interest, once recruited you will be able to consider next career steps. Use the likes of LinkedIn to monitor what is going on in industry and follow key organisations that will provide industry info e.g. SMMT, IMechE.

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I am a graduate student and wanted to work as a Vehicle Dynamics engineer. Please give me some tips and useful tricks to get into this field.

MTI: Try focusing one of your final projects in an area relevant to Vehicle Dynamics so you have a head start and it encourages you to research and find out even more about the industry. Keep your eye out for industry experience, or voluntary work to build your experience and CV.

We do run a short course 'Introduction to Vehicle Dynamics' which is aimed at students, researchers or practicing graduate engineers at the start of their career aiming to improve their understanding and knowledge of vehicle dynamics, ride and handling, durability, suspension modelling, tyre mechanics, tyre modelling and the use of multibody systems analysis as a computer simulation design tool.

Lisa Rowles, HORIBA MIRA: Use the likes of LinkedIn to monitor what is going on in industry and follow key organisations that have projects in your field of interest to keep abreast of the current trends.

As we move to higher levels of electrification and autonomy the need for cybersecurity engineers and skills becomes ever more critical. What pathways do we need to get in place to ensure we have the right quality and quantity of cyber engineers?

MTI: Our Connected Autonomous Systems Masters is a great start for this we have industry and Education both teaching this at the MTI, and it has a module on cybersecurity. Coventry University's Institute of Coding (IoC) and HORIBA MIRA have designed this Masters course to address a shortfall in the number of university graduates skilled in autonomous vehicle software development and deployment.

Murry has mentioned some new emerging job functions but do the panel have insight to any others beyond those already mentioned?

Lisa Rowles, HORIBA MIRA: Connected & Autonomous Vehicles, Unmanned Ground Vehicles, Energy Efficiency, ADAS, Functional Safety, Software Engineering, Electrification.

As someone who is about to build a new team, with the shift to remote working, what are the panel's thoughts on the coaching and developing new staff? Traditionally this is done with the whiteboard session or going sitting down and running through tasks together. Do we think the tools of Zoom/Teams etc are sufficient to fill this gap or are we going to rethink how we go about nurturing talent?

MTI: Digital knowledge and tools are developing as we speak, and we are learning new ways to work digitally. MTI can work with you to help you with your training and development needs to create a plan to upskill your staff. There are also free courses available in certain areas of the midlands that will update your skills in this area.

Lisa Rowles, HORIBA MIRA: With some roles you may wish to consider a hybrid working model of socially distanced on site collaboration, and home working.

Can HORIBA MIRA provide any skills-based training and internships?

Lisa Rowles, HORIBA MIRA: All internships available at HORIBA MIRA will be advertised via our website. These are not likely to restart until we can physically locate team members on site.

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Given the pace of EV/high voltage change, what are your views on safe learning EV/High voltage learning equipment availability for colleges delivering automotive technology before apprentices and technicians move to live vehicles or in time inside the battery?

MTI: The MTI has been funded by the LLEP and has all the latest equipment to teach EV/High voltage change in a safe environment. We have hands on training rigs of full vehicles and rigs that simulate the full vehicle. We have a qualified technician in the workshops to support learning to ensure it is a safe environment and the lecturer is always supported. We have accredited by the IMI and non-accredited courses in this field please see all courses our website.

Do you have any advice or new trends to share for students trying to develop their soft skills and interface with professionals in a remote setting?

MTI: By getting to grips with the same systems they are at the moment - using teams and zoom. Telephone skills is key, ensure these are up to speed and you are able to confidently talk via the phone and engage in conversation. Impress people by creating your own virtual backdrop which looks professional whilst speaking.

Are there any providers offering blended courses on Cyber, FuSa, SOTIF and Systems Engineering? There are many individual courses on each of these but the combination and the dependency of these on each other is often regarded as important for platform planning.

MTI: Yes, the MTI have a selection of all these courses on our website. We also work with employers to tailor a course to suit your needs. We are always looking to broaden our curriculum so please get in touch if there is a specific course your organisation would benefit from and the MTI can look into designing this for you.

What portion of verification is completed virtually for electrification systems vs. physical?

Stephen Lambert, McLaren Applied: It depends on the company you are working for. However, most progressive companies are moving towards more and more virtual verification. There is also a push by the UK AutoCouncil (body that provides insight for the UK government on the UK automotive industry) to encourage more automotive companies to take up virtual validation so the UK can be competitive in the longer term. It is definitely an area that will grow over the next 10 years.

Which skills are "must have" for an Automotive Master's graduate to gain advantage over other candidates?

Lisa Rowles, HORIBA MIRA: It is very helpful to link your master's to industry needs. Where possible base your projects in real life scenarios, seek to solve or improve real world issues that future employers will find relevant. Network as much as possible before you complete your education. This can be achieved via associate membership of the engineering institutions such as the IMechE. Keep abreast of industry headlines using the likes of LinkedIn and follow industry bodies such as SMMT.

How have firms re-aligned their strategy to incorporate Covid operations?

Lisa Rowles, HORIBA MIRA: Yes. HORIBA MIRA was one of the first organisations to achieve the COVID-Secure government status. This incorporates the HORIBA MIRA Triple S model to Standardise, Safeguard and Suppress to protect our workforce. More information can be found at <https://www.horiba-mira.com/about-horiba-mira/coronavirus-statement/>

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Can you provide any advices to a student that will be applying to placements? Are there opportunities that are not advertised?

Lisa Rowles, HORIBA MIRA: Placements may not always be advertised, so make direct contact with organisations of interest and show a link between your key study areas, areas of interest and express why the particular organisation is interesting to you. Monitor websites of all relevant companies to stay abreast of key topics and possible opportunities.

With the pandemic around do we have a chance of getting a job in automotive sector?

Lisa Rowles, HORIBA MIRA: The automotive industry still requires growth in key areas. Emerging and disruptive technologies are moving at a pace. New team members will be required to support that growth where appropriate.

What training offer & opportunities will there be for MIRA staff?

Lisa Rowles, HORIBA MIRA: The training available for MIRA Team Members can be accessed via the MIRA Skills Coordinator and Talent Management Lead. Contact - shani.roberts@horiba-mira.com or julian.wbber@horiba-mira.com.

What was the hardest thing that members of the industry had to adapt to?

Lisa Rowles, HORIBA MIRA: This situation is dynamic and changing at a pace. It is important to stay abreast of the changes and plan positively and flexibly for the future.

How does a low volume automotive company move towards electrification?

Stephen Lambert, McLaren Applied: This is a difficult question and there are a lot of low volume automotive companies wrangling with that at the moment. The company will have to develop some expertise in electrification, even if it is only the ability to understand the technology they are integrating onto their platforms. However, there are more and more off-the-shelf solutions coming onto the market that don't require the investment that a larger OEM would automatically make. However, an understanding of the technology is required to ensure that it can be implemented in the right way. Happy to provide more information on this if there is a specific company you are interested in.

Are there specific MSc programmes on cybersecurity?

MTI: Our CAVS MSc has a cybersecurity module taught by HORIBA MIRA. Take a look at this course on our website for more information.



If you have a question you would like to ask, please get in touch with us on enquiries@mti.ac.uk.

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