UNIVERSITY of BRADFORD

Faculty of Engineering & Informatics

Faculty of Engineering and Informatics Newsletter

July 2021

Welcome from the Dean

I need not tell you that most Covid restrictions were eased in England on 19 July 2021 by the Government. However, coronavirus has not gone away, and we all must behave responsibly and professionally in the coming weeks and months to ensure that all our staff and students continue to work in as safe an environment as possible.

In the most recent Executive Voice (23 July 2021), the Vice Chancellor stated that all staff will return to campus, as their principal work base, for the next academic year. We are now in a transition period to that end goal from 19 July 2021 to September, subject to any changes in Government restrictions and guidance. Line managers brought plans for their areas to the Faculty Management Committee on 21 July 2021 after consultation with their staff. A way forward has been mapped that balances all the elements of the Return to Campus Resource Hub plus a focus on staff annual leave and specific Faculty campus readiness issues, such as the ongoing cladding work of the Horton building.

Your line manager will liaise with you further, working with you to map out the days you will attend campus in the coming weeks so we can spread attendance effectively across the working week. The process for research students will be led by Professor Felician Campean as the Associate Dean for Research and Knowledge Transfer. In summary, we have adopted a flexible and agile approach that will lead us to the new academic year.

Newsletter summary:

UK Social Mobility Awards shortlisting for University

The University of Bradford has been shortlisted in the University of the Year category in the UK Social Mobility Awards 2021.

The awards - now in their fifth year - celebrate institutions and businesses that are making strides and creating initiatives to advance social mobility within their own workforce or beyond their own walls.

The University of Bradford offers a range of schemes designed to increase social mobility, which includes hardship fund loans, special support for care leavers, a graduate workforce programme to boost employment and an admissions system which takes account of personal circumstances, not just exam grades.

More here>>

Academic in profile:

Dr Amr Abdullatif

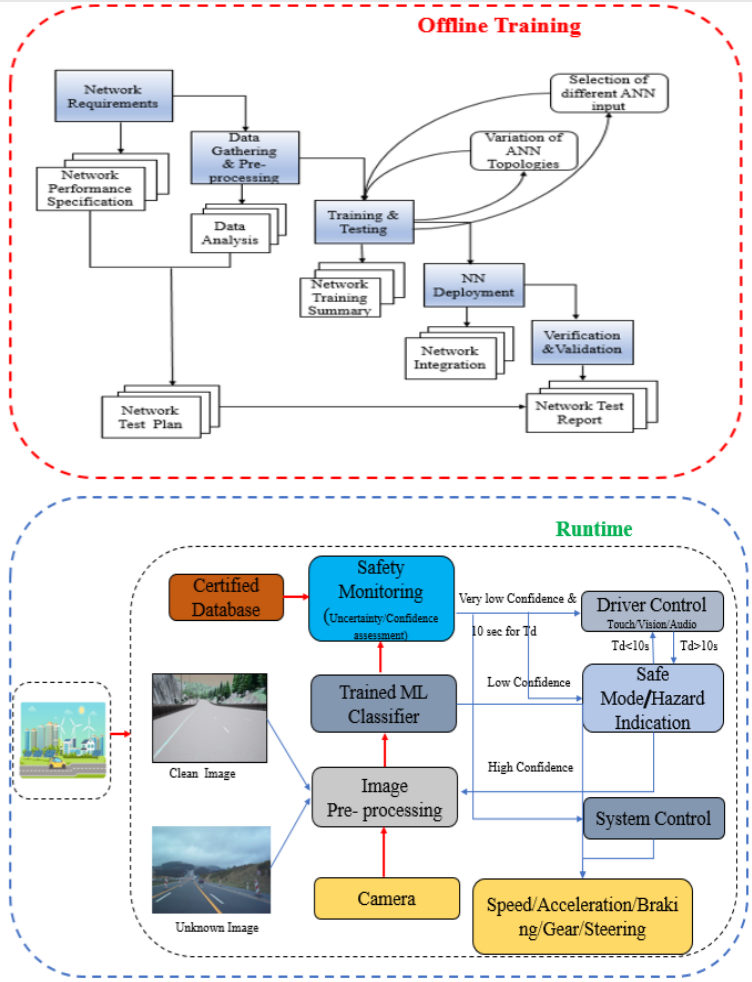
Amr is an Assistant Professor in Computer Science with extensive industry experience. He is working on several projects with General Electric, Baker Hughes, Valeo, JLR, and NHS.

Amr got his PhD in computer science and system engineering from Genova University, under the supervision of Prof. Francesco Masulli and Prof. Stefano Rovetta. His PhD looked into Layered Ensemble Model for Short Term Traffic Forecasting by combining a novel online possibilistic clustering model and an ensemble of neural networks. He joined Bradford from Baker Hughes in Italy, a GE Oil and Gas company where he worked as a Machine Learning (ML) researcher.

His research interests focus on machine learning, deep learning, safety assurance of machine learning based systems, predictive diagnostics, and online learning from data streams. He is actively involved in many research areas such as safety & reliability of ML, explainable Artificial Intelligence (AI), learning in non-stationary environments, causal representation learning, and certification of ML algorithms for autonomous systems.

Amr's aim is to build a research group that focuses on the safety, verification, and reliability of autonomous systems which relies on AI. He is a principal supervisor for 2 PhD students and associate supervisor of 3 PhD students.

Amr has over 180 citations of his publications. At the moment Amr is preparing his new investigator grant and he is looking for collaborators.



Current research interests:

- Certification of autonomous systems with AI components.
- Safe exploration and learning for better perception by AI systems.
- Explainable, accountable, and fair AI.
- Failure identification and reliability monitoring of the AI based systems.
- Deep Learning and Machine Learning applications particularly for Automotive, and Digital Healthcare, and Supply Chain.

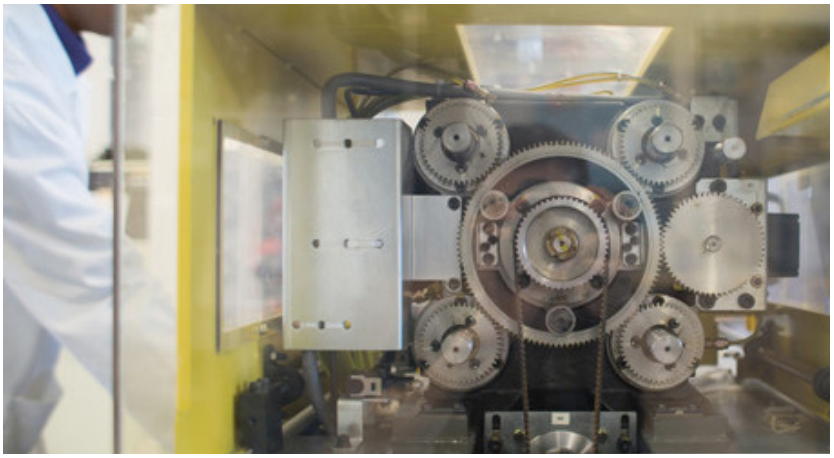
Research projects:

- Supply Chain Process Automation through Machine learning.
- AI for Reliability-based Feature Optimisation with Driver Contextual Intelligence.
- Responsible AI and Distributed Ledger Technology for Trusted Decision Support in Health and Education.
- AI-based Expert System for Supporting Decision Making in UK Immigration Law.

Research and Knowledge Transfer

Projects submitted:

- RobacteriaFibres: - Regenerating Textile Fibres from Recycled Garment Wastes via Emerging AI, Robotics and Bacteria Technologies, Adrian Kelly
- Vision Surgery KTP, Rami Qahwaji
- COMET extension, Fun Hu
- Service provision for nanotube compounding, Tim Gough



Skype for Business Online is retiring on 31 July 2021

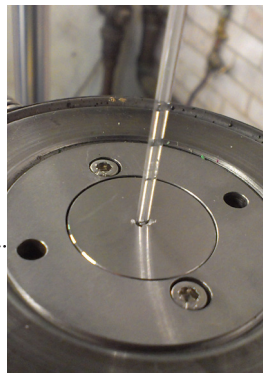
There is no action needed on your part.

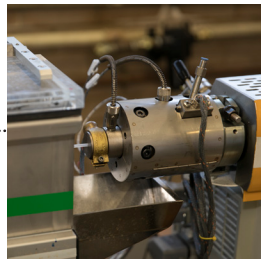
This service is not being retired completely and will continue to be available until the University changes its telephony system. However, because of the richer set of communication and collaboration functions provided by Microsoft Teams, IT Services recommend using Teams (rather than Skype for Business) to schedule online meetings (internal and external), to make internal calls, and to instant message others within the University.
The only scenario in which you will still need to use Skype for Business is where you need to make a call by using a dial pad. This is because the ability to use a dial pad has not yet been configured in our instance of Teams – this, along with full telephony functionality in Teams, is planned for a later date.

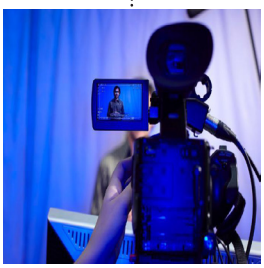
More here>>

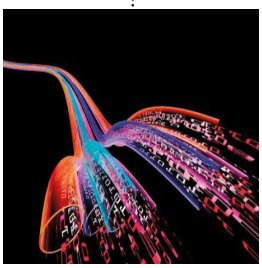
Open calls for funding:

- Research-ready data and access funding, Closing date: September 2021 16:00 UK time
- Biomedical catalyst 2021: early and late-stage awards, Closing date: 26 August 2021 11:00 UK time
- Public health intervention development (PHIND): Sep 2021, Closing date: 15 September 2021 16:00 UK time
- Equality, diversity and inclusion in the energy research community, Closing date: 4 November 2021 16:00









Staff and Students' news

A Level YR12 STEM Enrichment Project

Hanson School students were invited to visit the University and to look at techniques that can be employed to assess the current design flaws in PPE goggles. PPE is made and manufactured to measure the Caucasian male profile, therefore failing to fit Caucasian females and people from other ethnic backgrounds.

Prof Ben Whiteside, Dr Fin Caton-Rose, Prof Hassan Ugail and Dr Cristina Tuinea-Bobe hosted the student group lead by Mr Clemmett in June. We organised a range of activities that introduced the students to facial recognition, face scanning and manufacturing. The students were provided with the head profiles which they will map to understand the differences between people from different ethnic backgrounds.

The University showcased during this workshop its labs and capabilities to students, increasing 6th form students' understanding regarding the impact of engineering and technology on everyday life. This as an exciting opportunity for both academics and students. The students gained inspiration and it was a great way to celebrate their creativity, allowing them to bring their work to life in a new and innovative way. Students and teachers found the visit a fantastic educational opportunity to learn how to use software and hardware and develop skills.

This STEM enrichment project is part of the Rolls Royce Schools Prize for Science & Technology.

Hanson
EST. 1897

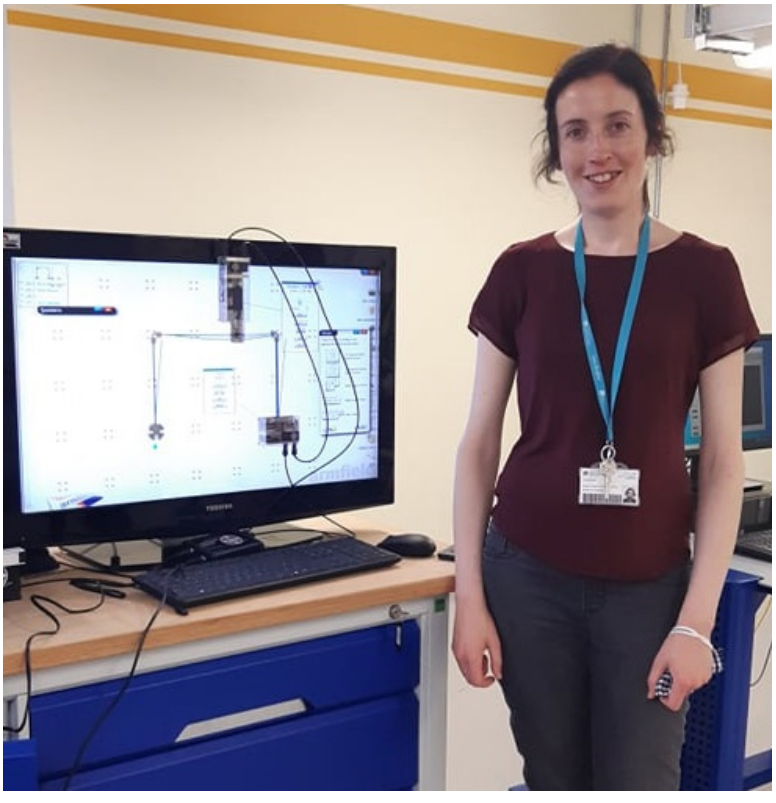
Rolls-Royce
Schools Prize
for SCIENCE & TECHNOLOGY

Staff and Students' news

STEM Summer School

July would usually see school children looking around the university and doing some activities in the labs. However, with restrictions still in place this is not possible, so STEM organised some online engagement activities that included meeting researchers and watching lab demonstrations. The summer school was for year 12 students from 2 colleges and 3 local 6th form schools and ran over 3 days.

On July 8th the students joined online zoom lab sessions from Anatomy in Life Sciences and from Engineering. STEM Ambassadors and Engineering Technicians, Joanna Wood and Steve Allan, worked with Dr Therese Sheehan to put together the online lab session, hoping to encourage and inspire young people to consider Engineering and to show a little bit about what we do in the lab. They looked at sensors and how mechatronics are used in everyday life using the National Instruments board training kits. The session focused on sensors used in automotive engineering with cars detecting obstacles and gauges used for structural mechanics for bending and torsion.



Staff and Students' news

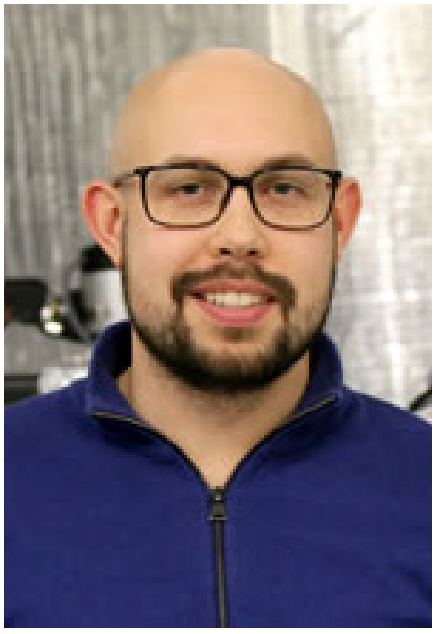
Dr Jaan Pu is the SOLE EDITOR for Special Issue of MDPI - Fluids

This special issue of Fluids (ISSN 2311-5521), within the section 'Geophysical and Environmental Fluid Mechanics' concentrates on 'River Hydraulics and Bedforming'.

Jaan said: "This Special Issue's scope comprises, but is not limited to, the characteristics of river hydraulics, temporal and spatial developments of the riverbed under different geometric and sedimentation factors, vegetation impact within river flow, and extreme river flow events (i.e., flood and dam-break flow)."

Deadline for manuscript submissions: 31 December 2021.

More information here>>



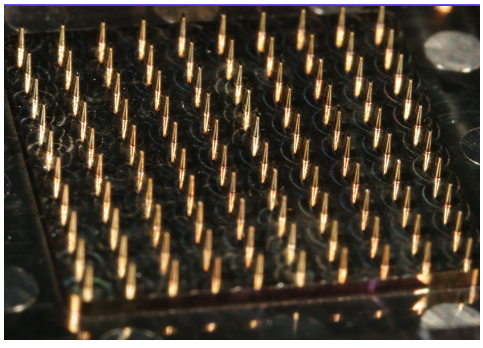
Early Career Research Seminar (ECRF)

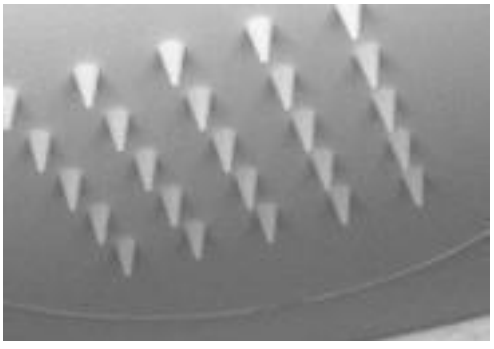
Dr Max Babenko gave his presentation entitled 'Microneedles at University of Bradford: From Concept to Reality'.

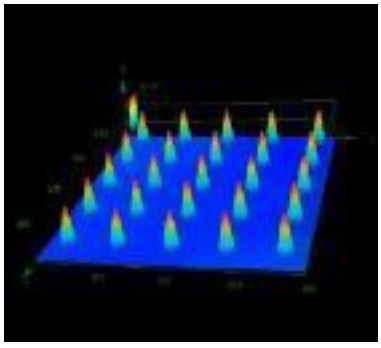
Dr Cristina Tuinea-Bobe gave the forum members a few tips for career development and discussed future arrangements for the forum.

Our next meeting is on 18 August 2021, 12 noon.

More here>>







Staff and Students' news

New Staff: Smriti Kotiyal

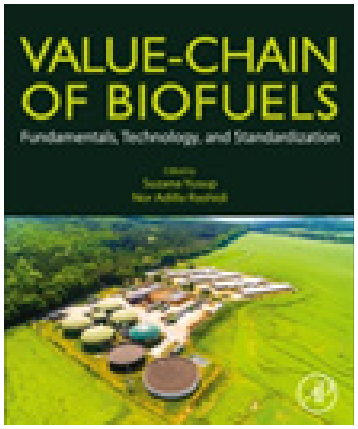
Smriti completed her MSc in Big Data Science and Technology from the University of Bradford in September 2020. She worked on 3 different projects as a Research Assistant that included projects from Bradford Institute of Health Research. Before coming to the UK for her studies, she worked in corporate industry for 3 years in India and Australia.

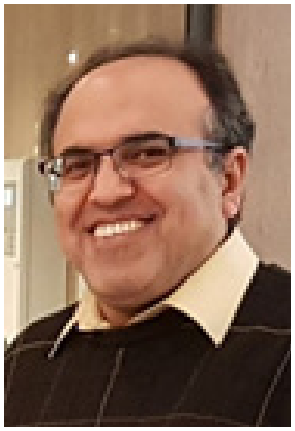
Now, Smriti has been appointed as KTP Associate (Artificial Intelligence Engineer) for the A Y & J Solicitors KTP project. Her role will concentrate to develop a decision support system to support UK Immigration cases by employing specialist knowledge and expertise in Artificial Intelligence, Deep Learning and Knowledge graphs.

Smriti will help to handle in a more efficient and effective way the growing business by developing during her KTP a self-serving, affordable and more approachable AI system. The system will have the capability to undertake the initial customer interaction and would act as a decision support system for the case workers in the company in future.

Smriti said: "It is a challenging and demanding project, but it would lead to great outcomes in the next 2 years."

Converting Waste Cooking Oil to Bio-fuel in Bradford





Dr Nejat Rahmanian has recently been working on a book which has now been published by Elsevier. This was a cross-disciplinary collaborative project with the Department of Mechanical Engineering (Dr Jian Ping Li) and the Automotive Department at the University of Huddersfield. The converted bio-fuel was tested in a suitable engine located at the University of Huddersfield for characterisation of emissions such as NOx, CO, CO2 and incombustible hydrocarbon. Dr Rahmanian welcomes any collaborators in this research area, which with no doubt will impact on local society and the region.

In the Chemical Engineering Department, the work was led by Dr Rahmanian, with the assistance of Professor Patel,who wish to thank all collaborators.
More information about this book can be found here >>