Job Title		**Research Associate - Radar System Engineer**
No. of Positions		**01**
Duration		**3 Years**
School/Institute/Centre		**SINES**
1	**Purpose of Position**	
	The radar system engineer is expected to study and come up with system requirements for railway applications. The individual shall liaison with other team members to generate system architecture, generate BOMs, carry out procurement and perform system integration and testing. The individual should have broad knowledge of radar sub-components including RF front-ends, FPGAs, signal processing etc.	
2	**Functions/Duties (Key Responsibilities)**	
	Radar System Design Engineer should be able to: • Design system architecture suitable for railway applications including multitude of sensors like RADAR, LIDAR, Thermal and Optical Cameras • Identify modules, sub-systems suitable for chosen architecture • Perform system integration, lab and operational testing • Write project reports	
3	**Requirements**	
	Essential	**Desired**
Qualifications	Bachelors in Electronics/Electrical Engineering or relevant field with experience from HEC recognized institution	Master's degree in EE or relevant field with experience in RF & Microwave
Experience	Min 1 year in similar role	2 years experience in similar role
Knowledge/ Skills/Abilities/ Competencies	• Knowledge of radar, lidar, thermal and optical cameras and their associated complementary strengths • Report writing skills • Team management & project management skills • Knowledge of power electronics and processing platforms • Knowledge of Electrical/Electronics-Industry standards • Modeling of mechanical designs in 3D CAD tool	
4	**How to Apply**	
Please email your resume to projectposition@sines.nust.edu.pk only if you fulfil the criteria mentioned above with job title **"Radar System Engineer"** in the subject field by **15th Mach 2022**.		

Job Title		**Research Associate - RF / Antenna Design Engineer**
No. of Positions		**01**
Duration		**3 Years**
School/Institute/Centre		**SINES**
1	**Purpose of Position**	
	The RF / Antenna Design Engineer shall be responsible to design the RF front-end and antenna assembly of the radar system.	
2	**Functions/Duties (Key Responsibilities)**	
	RF Design Engineer should be able to: • Design, Analyze and work with RF and antenna assemblies, modules & sub-systems • Design PCBs • Stuff and test the designed modules • Handle RF equipment • Knowledge of precautions for handling RF components and equipment	
3	**Requirements**	
	Essential	**Desired**
Qualifications	Bachelors in Electronics/Electrical Engineering or relevant field with experience from HEC recognized institution	Master's degree in EE or relevant field with experience in RF & Microwave
Experience	1 year experience in RF & Microwave	2 years experience in RF & Microwave
Knowledge/ Skills/Abilities/ Competencies	• RF & Microwave / Antenna skills • Report writing skills • PCB designing skills • Circuit designing skills • Knowledge of RF/EMC compliance standards • Able to use test equipment/instruments • Able to communicate with other team members	
4	**How to Apply**	
Please email your resume to projectposition@sines.nust.edu.pk only if you fulfil the criteria mentioned above with job title "**RF / Antenna Design Engineer**" in the subject field by **15th Mach 2022**.		

Job Title		**Research Associate - Embedded System Engineer**
No. of Positions		**01**
Duration		**3 Years**
School/Institute/Centre		**SINES**
1	**Purpose of Position**	
	The Embedded System Engineer shall be responsible to design and use embedded and power sub-systems for the overall radar system. The primary task of embedded design engineer is to map control and signal processing functions of radar on different hardware platforms. This includes knowledge of different processing platforms including FPGAs, embedded GPUs, DSPs.	
2	**Functions/Duties (Key Responsibilities)**	
	Embedded System Engineer should be able to: • Extract control and processing platform requirements • Hardware-software partitioning • Work with FPGAs, microcontrollers, embedded GPUs, edge compute devices • Map control, signal processing and AI modules on software and hardware • Design embedded and power module circuits • Integrate and test the designed modules with other sub-systems	
3	**Requirements**	
	Essential	**Desired**
Qualifications	Bachelors in Electronics/Electrical Engineering or relevant field with experience from HEC recognized institution	Master's degree in EE or relevant field with experience in Radar
Experience	Min 1 year in similar role	2 years experience in Embedded Systems and/or Power Electronics
Knowledge/ Skills/Abilities/ Competencies	• Digital system design using FPGAs (Verilog/VHDL) • Microcontrollers software development and testing skills • Power Electronics software and testing skills • Circuit designing skills • Intellectually curious, should be a quick learner and not hesitant to try new tools • Report writing skills • Able to use test equipment/instruments • Able to communicate with other team members	
4	**How to Apply**	
Please email your resume to projectposition@sines.nust.edu.pk only if you fulfil the criteria mentioned above with job title "**Embedded System Engineer**" in the subject field by **15th Mach 2022**.		

Job Title			**Research Associate - Signal Processing / Sensor Fusion Design Engineer**
No. of Positions			**01**
Duration			**3 Years**
School/Institute/Centre			**SINES**
1	**Purpose of Position**		
The Design Engineer is required as a team member in an HEC funded project in the area of Signal Processing / Sensor Fusion. The primary responsibilities of the design engineer will include designing individual signal processing chains for variety of sensors including RADAR, LIDAR, optical and thermal cameras. Additionally, a sensor fusion architecture will also be designed and implemented for fusion of data from all these sensors.			
2	**Functions/Duties (Key Responsibilities)**		
Signal Processing / Sensor Fusion Design Engineer will be required to: • Design of signal processing chains for individual sensors (RADAR, LIDAR, Optical, Thermal Cameras) • Performance quantification of algorithms • Perform data acquisition through multiple interfaces • Analyze the sensor data • Design target detection and classification algorithms using AI/ML • Design sensor fusion algorithms and their performance quantification			
3	**Requirements**		
		Essential	**Desired**
	Qualifications	Bachelors in Electronics/Electrical Engineering or relevant field with experience from HEC recognized institution	Master's degree in EE or relevant field with experience in Signal Processing and Sesnor Fusion
	Experience	Min 1 year in similar role	2 years experience in Sensor Signal Processing and Fusion
	Knowledge/ Skills/Abilities/ Competencies	• Hands on Digital Signal Processing skills • Background knowledge of Computer Vision and Image Processing • Understanding of ML algorithms for detection and classification • Be able to acquire data from a variety of communication interfaces • Hands on experience of performing signal processing simulations, filtering methods in MATLAB Simulink or other tools • Be able to evaluate performance of algorithms • Understands the theory of operation and specification parameters of a variety of sensors • Able to use test equipment/instruments • Report writing and presentation skills • Intellectually curious, should be a quick learner and not hesitant to try new tools • Able to communicate with other team members	
4	**How to Apply**		
Please email your resume to projectposition@sines.nust.edu.pk only if you fulfil the criteria mentioned above with job title "**Signal Processing / Sensor Fusion Design Engineer**" in the subject field by **15th Mach 2022**.			

Job Title		**Research Associate - Artificial Intelligence Engineer**
No. of Positions		**01**
Duration		**3 Years**
School/Institute/Centre		**SINES**
1	**Purpose of Position**	
The Design Engineer is required as a team member in an HEC funded project in the area of Applied AI. The main role of the engineer is to gather data related to the intended application and develop AI and sensor fusion algorithms followed by visualization dashboards.		
2	**Functions/Duties (Key Responsibilities)**	
• Design and Develop machine learning, computer vision and data fusion algorithms. • Write APIs for AI algorithms. • Deploy and optimize machine learning models/algorithms as scalable software. • Work collaboratively in a cross-functional team environment. • Design dashboards for algorithm prototyping.		
3	**Requirements**	
	Essential	**Desired**
Qualifications	Bachelors in Electronics/Electrical Engineering, Computer Engg, CS or relevant field with experience from HEC recognized institution	
Experience	Min 1 year in similar role	
Knowledge/ Skills/Abilities/ Competencies	• Experience with ROS, Tensorflow or PyTorch is a must. • Excellent understanding of image processing techniques. • Excellent knowledge of Machine Learning concepts. • Excellent understanding of sensor integration and data fusion concepts.	
4	**How to Apply**	
Please email your resume to projectposition@sines.nust.edu.pk only if you fulfil the criteria mentioned above with job title "**Artificial Intelligence Engineer**" in the subject field by **15th Mach 2022**.		