



SYNERGY OF REALITIES
EPSILON 2024

14 - 16 SEPTEMBER 2024

IEEE SIESGST PRESENTS

EPSILON 2024

What is Epsilon?

Epsilon is a three-day Annual Symposium scheduled from the 14th to 16th of September where international speakers and industry experts will share their knowledge and expertise through a series of interactive webinars, hands-on workshop and panel discussions on our established theme 'Synergy of Realities'.

What is the theme about?

The 'Synergy of Realities' theme embodies a groundbreaking fusion of the physical and virtual realms, leveraging the disruptive potential of AR VR in Digital Twins to transform decision-making and training paradigms, Autonomous Vehicles empowered by LIDAR Sensors, which generates hyper-accurate digital models for navigation and safety, and the pioneering NeuroBytes Revolution to harmoniously integrate human and machine intelligence, thereby unlocking unprecedented opportunities for innovation, growth and progress.

What are the learning outcomes?

Participants will have the opportunity to grasp the key concepts behind these broad topics through webinars guided by industry experts and interactive workshops. Our symposium, welcomes beginners from all backgrounds and making them equipped right from scratch. In addition to developing technical skills, attendees will benefit from peer-to-peer engagement too. Over the course of the three-day event, participants will gain a comprehensive understanding of the subjects covered.

TRACK 1 : CS

Topic : AR VR in Digital Twins

ABOUT CS

The **Computer Society of IEEE SIESGST** was launched on 2nd March, 2021. The chapter's primary objectives include fostering a strong support system for students and encouraging their participation in competitive coding programs.

Date & Time	TOPICS	SUBTOPIC TO BE COVERED
DAY 1: 14-09-2024 Talk session 11:30am - 1:00pm IST	Simulation to Reality	<ul style="list-style-type: none">• Digital Twin Overview: Key concepts, benefits, and uses.• AR/VR Integration: Enhancing Digital Twin experiences.• Industry Applications: Successful use in manufacturing, healthcare, and energy.• Implementation Steps: Key steps for adopting Digital Twins with AR/VR.
DAY 2: 15-09-2024 Workshop 11:30am - 1:00pm IST	Virtual Biz	<ul style="list-style-type: none">• Use KNIME for data analytics and missing data handling.• Predict energy consumption with digital twin models.• Create 3D models in Unity for AR/VR visualisation.• Deploy results in CSV format for analysis and reporting.
DAY 3: 16-09-2024 Panel Discussion 11:30am - 1:00pm IST	Digital Twins Unplugged	<ul style="list-style-type: none">• Digital Twinning• AR/VR in Digital Twinning• Challenges & Limitations• Ethical Considerations• Future of Digital Twinning• Role of AI in digital twins

TRACK 1 : CS

Topic : AR VR in Digital Twins

Day 1 : JayKumar Goswami



JayKumar Goswami is a Robotics Engineer pursuing an MS in Robotics (ECE) at Northeastern University, Boston. A former researcher at ISRO and Junior Research Fellow at BVM, he specializes in robotics, digital twins, and industrial automation. As an AR/VR mentor and event speaker, Jay is pushing the boundaries of innovation Robotics.

LinkedIn: <https://www.linkedin.com/in/goswamijay/>

Day 2 : Pierpaolo Vergati

Pierpaolo Vergati is a Senior Construction Project Manager focused on digital transformation in construction. A Digital Twin enthusiast and KNIME-certified trainer, he drives innovation through data analytics and advanced technologies. With an academic background from Sapienza Università di Roma, Pierpaolo is dedicated to revolutionizing the construction sector by integrating cutting-edge tools and methodologies

LinkedIn: <https://www.linkedin.com/in/pierpaolovergati/>



Day 3 : Amrut Mujumdar

Amrut Mujumdar is a PhD Scholar at Indraprastha Institute of Information Technology, Delhi, in the Department of Human Centered Design. He is deeply passionate about immersive technologies such as XR (AR/VR/MR), haptics, digital twins, and the metaverse, dedicating his time to designing, developing, and exploring digital experiences that seamlessly merge reality with imagination. With a knack for game development and an interest in the intersection of electronics and immersive tech, Amrut is focused on using technology to drive innovation and business opportunities, whether it's creating VR experiences or integrating AR into marketing strategies.

LinkedIn: <https://www.linkedin.com/in/amrut-mujumdar>



TRACK 1 : CS

Topic : AR VR in Digital Twins

Day 3 : Abhishek Anand

Abhishek Anand is an Implementation Analyst at Hexagon R&D India, specializing in Digital Twin technology, software implementations, and client consulting. He has a strong background in implementing digital solutions and has experience with SQL, APIs, and other technologies. Abhishek has previously interned at Oil India Limited and the Central Tool Room & Training Centre.

LinkedIn: <https://www.linkedin.com/in/abhishek-anand212/>



Day 3 : Santosh Tummi

Santosh Tummi is an accomplished 3D Artist and XR (AR/VR/MR) Designer with extensive experience in the information technology and services industry. Currently, he holds the position of Lead Engineer at HCLTech, where he focuses on AR/VR/MR technologies. Santosh has a strong educational background with a Diploma in Animation from Arena Animation and a Bachelor's degree in Engineering Design from GITAM University.

LinkedIn: <https://www.linkedin.com/in/santosh-tummi-097bb51a0/>



Day 3 : Emmanuel Lwele

Emmanuel Lwele, a PhD Researcher at the forefront of Robotics, Machine Learning, and Digital Twin technology, with a particular focus on transforming industrial processes. Working under the National Centre of Excellence for Food Engineering, Emmanuel is currently exploring AI-driven surrogate modeling for digital twins. His research aims to revolutionize how industries leverage advanced learning algorithms to enhance the autonomy of robots, vehicles, and drones.

LinkedIn: <https://www.linkedin.com/in/emmanuel-lwele-208939114/>



TRACK 1 : CS

Topic : AR VR in Digital Twins

Day 3 : Moderator – Raj Vaswani

Raj Vaswani is an architect and entrepreneur with 7.5 years of experience in design, BIM, and digital innovation. He has led BIM teams, developed strategic digital roadmaps, and managed large-scale projects for industry giants and has a strong focus on technology-driven solutions, including AI integration, automation, and ERP systems to improve efficiency in construction projects. He is also involved in creating SOPs for BIM implementation and has released over 30 courses in design and BIM.

LinkedIn : <https://www.linkedin.com/in/ar-raj-vaswani-1a8483135>



Day 3 : Florian Huemer

Florian Huemer is the co-founder of PropX, a company focused on revolutionizing urban cities by developing 3D digital twins of buildings and city districts using AI and metaverse technology. With a mission to merge virtual and physical worlds, his expertise lies in collaborating with city planners and developers to deliver large-scale projects. His company, PropX, also integrates real estate developments into Fortnite, using the platform as a dynamic marketplace and creative space for immersive 3D experiences.

LinkedIn : <https://www.linkedin.com/in/florianhuemer/>



Day 3 : Sean Whiteley

Sean Whiteley has over 25 years of enterprise in IT and innovation experience, working with the world's largest companies through to building deep tech startups. Sean started axomem.io in 2019 to build his vision of an intelligent, autonomous digital twin and AI hosting platform called Axoverse. Over the past 3 years he has been co-leading a multi-institution collaboration to implement hospital-wide intelligent digital twins on Axoverse to visualise and predict disease spread for multiple infectious disease types, including respiratory illnesses like COVID-19 and Multi Drug Resistant Organisms (Superbugs).

LinkedIn : <https://www.linkedin.com/in/seandwhiteley/>



TRACK 2 : WiE

Topic : NeuroBytes Revolution

ABOUT WiE

The Women in Engineering (WiE) Society is a global organisation that aims to inspire, empower, and advance women in engineering and technology. The mission of WiE is to facilitate the recruitment, retention, and career advancement of women in engineering and technology.

Date & Time	TOPICS	SUBTOPIC TO BE COVERED
DAY 1: 14-09-2024 Talk session 1:30pm - 3:30pm IST	NeuroBytes: The Next Wave in Computing	<ul style="list-style-type: none">• What is Neuromorphic Computing?• Basic Components of Neuromorphic Systems.• Simple Applications of Neuromorphic Computing.• Current State and Future Potential.
DAY 2: 15-09-24 Workshop 1:30pm - 3:30pm IST	Building a Simple Spiking Neural Networks(SNNs)	<ul style="list-style-type: none">• Overview of neuromorphic programming tools and frameworks.• Python libraries for simulating spiking neural networks.• Guide to building and simulating a simple spiking neural network.• Implementation of basic neuromorphic algorithms.• Guide to implementing neuromorphic algorithms on hardware simulators.
DAY 3: 16-09-24 Panel Discussion 1:30pm - 3:30pm IST	Future of Neuromorphic Computing	<ul style="list-style-type: none">• Future of neuromorphic computing and emerging trends.• Challenges in neuromorphic hardware, software, scalability, and integration.• Ethical considerations in deploying neuromorphic systems.• Essential knowledge and skills to start in the field.

TRACK 2 : WiE

Topic : NeuroBytes Revolution

Day 1 : Siona Menezes Picardo



Dr. Siona Menezes holds a Ph.D. in Electronics Engineering and brings over five years of research experience in neuromorphic computing and nanotechnology. She has published extensively in top journals and is highly proficient with EDA tools like Cadence Virtuoso and MATLAB. From the beginning of her career as a lecturer at the prestigious Manipal Institute of Technology, to serving as Program Head at the International University of Bahrain, Dr. Menezes has demonstrated expertise across R&D, program management, and the Technical Training of cutting-edge technologies. Her leadership in cross-functional teams has driven significant technological advancements.

LinkedIn: <https://www.linkedin.com/in/siona-picardo-ph-d-62a4b524/>

Day 2 : Helena Bahrami

Dr. Helena Bahrami is a renowned expert in brain-inspired and quantum hybrid deep learning models, particularly in Spiking Neural Networks (SNNs). Her pioneering research focuses on using these models to predict and classify neurodegenerative diseases, enhanced by immersive 3D visualizations. As the AI and Machine Learning Lead Expert in the industry, Dr. Bahrami's work spans SNNs, Generative AI, and Machine Vision Systems. She has taught at AUT and other prestigious universities, with a strong reputation for both her academic contributions and leadership in advancing AI innovation.

LinkedIn: <https://www.linkedin.com/in/helenabahrami/>



Day 3 : Hanga Katreiner

Hanga Katreiner is a space engineer specialising in neuromorphic computing and space debris mitigation. Her work focuses on using neuromorphic swarm intelligence for object classification in low Earth orbit as part of her master's at TU Berlin. With experience from the European Space Operations Centre and contributions to Galileo 2nd Generation Satellites, Mrs. Katreiner has a strong background in space technology. Additionally, as an analog astronaut at AATC, she led a team in designing a Space Mining Station for the International Space Challenge Singapore 2024. Currently, she is deeply involved in a space startup that focuses on small satellites.

LinkedIn: <https://www.linkedin.com/in/hanga-katreiner/>



TRACK 2 : WiE

Topic : NeuroBytes Revolution

Day 3 : Sunny Bains

Dr Sunny Bains is a scientist and journalist based at University College London (UCL) where she teaches technical communication and journalism. She has written about neuromorphic engineering, robotics, biomedical technology, optoelectronics, and machine cognition for more than 30 years, which includes The Economist, Science, Nature, New Scientist, and Wired. She currently writes for, and produces the Brains and Machines podcast in conjunction with, Electronic Engineering Times. She is the author of Explaining the Future: How to Research, Analyze, and Report on Emerging Technologies, and is currently writing a new book about neuromorphic research, principles, and applications.

LinkedIn: <https://www.linkedin.com/in/sunnybains/>



Day 3 : Lyana Usa

Lyana Usa completed her MSc in Electrical Engineering with a focus on Microelectronics from Delft University of Technology. Her research concentrated on insect-inspired intelligence for sensor-computation integration, where she developed bio-plausible solutions for FPGA-based hardware acceleration using biological sensory systems and neural networks. Currently, she is a trainee in the On-Board Computer and Microelectronics sections at ESA ESTEC. Her groundbreaking work earned her the NATO Women & Girls in Science 2024 award for her proposal on an AI-based cognitive warfare monitoring technique.

LinkedIn: <https://www.linkedin.com/in/lyana-usa/>



Day 3 : Vidhi Waghela

Vidhi Waghela is a tech enthusiast with a strong focus on data science, cybersecurity, AI, and machine learning. With a Bachelor's in Information Technology and a Master's in AI and Machine Learning, she is committed to advancing technology in a secure and innovative way. Vidhi also runs the blog "Data Science Meets Cyber Security," where she provides insights on complex technologies

LinkedIn: <https://www.linkedin.com/in/vidhi-waghela-434663198/>



TRACK 2 : WiE

Topic : NeuroBytes Revolution

Day 3(Moderator) : Siona Menezes Picardo



Dr. Siona Menezes holds a Ph.D. in Electronics Engineering and brings over five years of research experience in neuromorphic computing and nanotechnology. She has published extensively in top journals and is highly proficient with EDA tools like Cadence Virtuoso and MATLAB. From the beginning of her career as a lecturer at the prestigious Manipal Institute of Technology, to serving as Program Head at the International University of Bahrain, Dr. Menezes has demonstrated expertise across R&D, program management, and the Technical Training of cutting-edge technologies. Her leadership in cross-functional teams has driven significant technological advancements.

LinkedIn: <https://www.linkedin.com/in/siona-picardo-ph-d-62a4b524/>

TRACK 3 : MTT-S

Topic : Future of Autonomous Vehicles

ABOUT MTT-S

The Microwave Theory and Techniques Society was inaugurated in the year 2019 to promote the advancement of Microwave Theory and its applications like RF, microwave, millimeter-wave and terahertz technologies.

Date & Time	TOPICS	SUBTOPIC TO BE COVERED
DAY 1: 14-09-2024 Talk session 04:00pm -05:30pm IST	LiDAR - Eyes of Autonomous Vehicle	<ul style="list-style-type: none">• Introduction to sensing technology for autonomous vehicle• Advancement in LiDAR for Autonomous driving• Integrating vision for safe navigation• Overcoming challenges like weather and cost.
DAY 2: 15-09-24 Workshop 04:00pm - 05:30pm IST	Navigating the future of Autonomous vehicles	<ul style="list-style-type: none">• Introduction to Point clouds and libraries• Pre-processing LiDAR• Object detection• 3D mapping perception• Build MAP using SLAM - live demo
DAY 3: 16-09-24 Panel Discussion 04:00pm - 05:30pm IST	Lidar vs Camera based systems	<ul style="list-style-type: none">• Data privacy and safety concerns in autonomous vehicle• Is LiDAR worth the investment?• Is LiDAR alone efficient for full autonomy?• Should LiDAR be paired up with other sensors like camera based systems?

TRACK 3 : MTT-S

Topic : Future of Autonomous Vehicles



Day 1 : Saurabh Kumar

Saurabh Kumar is an expert in sensor fusion and autonomous vehicle mapping, with extensive experience in academia and industry. He holds a Ph.D. from Chungbuk National University and works at Qualcomm, focusing on integrating Lidar, IMU, cameras, and GPS to solve complex perception and localization challenges for autonomous vehicles.

LinkedIn : <https://www.linkedin.com/in/saurabh-kumar-ph-d-32414876/>

Day 2 : Aditya Jagani

Aditya Jagani is a Robotics Software Engineer at MathWorks, specializing in sensor fusion and localization algorithms for self-driving cars. With a Master's in Robotics from Worcester Polytechnic Institute, Aditya has worked with startups and global companies, focusing on automation in logistics and robotics applications. He enjoys fencing and squash in his spare time.

LinkedIn : <https://www.linkedin.com/in/adityajagani44/>



Day 3 : Mike Williams

Mike Williams is an Autonomous Vehicle Operations Specialist with more than 6 years of experience testing and developing autonomous vehicles for several major automakers.

LinkedIn: <https://www.linkedin.com/in/mike-williams-aa125a13b/>



Day 3 : Shelvin Pauly

Shelvin Pauly is a robotics engineer focused on AI, sensor fusion, and control systems for autonomous systems. He has integrated advanced robots in labs and built perception pipelines. He is passionate about solving real-world challenges through robotics and AI and is eager to collaborate to innovate.

LinkedIn: <https://www.linkedin.com/in/shelvin-pauly/>



TRACK 3 : MTT-S

Topic : Future of Autonomous Vehicles

Day 3 : Srikanth Vidapanakal



Srikanth Vidapanakal is a seasoned technologist with over 24 years of experience in system software, cloud computing, big data, and machine learning. He has led multiple AI teams at Ola, focusing on autonomous driving, smart mobility, and voice recognition, while contributing to 12+ patents, with 4 granted in the US. His expertise spans insurance, retail, EdTech, and e-commerce, with his work published in renowned conferences like ICRA and NeurIPS. Currently leading the Embodied AI team at Ola Krutrim, he specializes in autonomous driving, robot manipulation, and mobile robots.

LinkedIn :<https://www.linkedin.com/in/srikanth-vidapanakal-7463b18/>

Day 3: Saurabh Kumar

Saurabh Kumar is an expert in sensor fusion and autonomous vehicle mapping, with extensive experience in academia and industry. He holds a Ph.D. from Chungbuk National University and works at Qualcomm, focusing on integrating Lidar, IMU, cameras, and GPS to solve complex perception and localization challenges for autonomous vehicles.

LinkedIn :<https://www.linkedin.com/in/saurabh-kumar-ph-d-32414876/>



Day 3 : Mohit Agarwala

Mohit Agarwala is highly skilled Research Engineer at Krutrim AI, specializing in vision and robotics for autonomous systems, with a focus on deep learning and algorithms. With a Masters in Communication & Signal Processing from IIT Bombay, he brings expertise in wireless networks and have made significant contributions to self-driving car technologies during their time at Ola. Outside of work, he is passionate about traveling, watching TV series, and staying active with sports like badminton and table tennis.

LinkedIn :<https://www.linkedin.com/in/mohit-iitb/>



Day 3 (Moderator) : Jinesh Vinaychandran

Jinesh Vinaychandran is a Technical Trainer and EV expert specializing in HV safety, battery packs, and fuel cell technology. He leads EV R&D at Devise Electronics and mentors future engineers. With TÜV SÜD certification, he bridges industry and academia to shape the next generation of engineers.





RULES AND REGULATIONS

Registration is required to participate in the event.

1. After registering, it is essential to join the official WhatsApp group for all further communications.
2. Participants are expected to maintain decorum and adhere to a proper code of conduct during interactions with the speakers.
3. Ensure a stable internet connection to avoid disruptions during the event.
4. Be punctual and join all sessions on time.
5. Necessary prerequisites for each session will be provided via WhatsApp to ensure smooth participation.
6. The registration deadline is 13th September 2024.

Platform: Youtube

Date : 14th September to 16th September 2024

For Further Queries, Please Contact:

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