FEBRUARY 11 ,2025

ROSO INDUSTRY

NEWSLETTER

ProjectsHome — ROSO. (2024). Rosocoop.com. https://rosocoop.com/ProjectsHome

SUMMARY OF THE TALK

On February 11, 2025, Section 9 students from Technology and Information System course attended a talk by Professor Wang Shih Yuan, the director of ROSO Industry, accompanied by Dr. Pang Yee Yong. The talk explored into robotics and computational design technologies employed by ROSO. Professor Wang elaborated on the interdisciplinary research and innovative technology utilized by ROSO. ROSO's research focuses on two directions which are exploring new materialization methods for architecture and providing industrial solutions to solve labor shortages. Both approaches integrate materials, AI computation and machine.Additionally, Professor Wang shared how ROSO uses robots to explore new possibilities for architectural materialization and transform the global construction industry. He showcased 3D printing construction and furniture used the advanced technology and explained robot control system, about how robot motion is connected to a robot server and controlled using a controller, sensors, and interfaces .The talk deepened students' understanding on robotics in architecture and highlight the role of advanced technologies in the future advancement of construction.

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TECHNOLOGIES AND ISSUES DISCUSSED

In the talk, Professor Wang discussed about ROSO's aims to explore a new way of materialized architecture and application of consumptional bodies to solve labour shortage over the world. ROSO introduces the usage of robots in architecture design and consumption. For example, using generative AI in design phase of urban design, designers are able to integrate with keywords to generate and modify design. This makes the design process much easier for non-engineers in the field since the process is shortened and mistakes caused by miscommunication can be avoided. Besides, ROSO developed a visual programming process for the tool for simulation of robotic arm to ease the use of designers. . Collaborations between robots and technologies such as softwares and AR are also developed. The tool is able to stream trajectory to real robots and to be controlled by mobile platform, which is a convenient function for designers

Professor Wang also introduced glass 3D printing technology, However, only small pieces can be produced since a very high temperature is required in the process. ROSO is currently looking for ways to stack up different pieces to built sculptures in larger scale.

REFLECTION

During this industrial visit, we realized in-depth about innovative activities undertaken by ROSO. It was an inspirational presentation.

In architecture research, the lab experiments with new ways of building with materials and industrial application solutions is simply amazing. Their new ideas regarding construction can break the conventional shapes and give us much more innovative and beneficial spaces to construct. Also, to take care of the problem of not having enough workers, they came up with smart solutions. Through material combination, AI technology, and machines, they can build faster and do not need as many workers. This is even important for the construction business.

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The projects we witnessed were also filled with innovation. Use of materials such as glass and bamboo in a new way for sculptures and buildings offers greater possibilities for building materials and can make buildings and art enviromental-friendly. Robots are also being used in construction, which is making construction more accurate and faster.

For software and technology, the robot simulation software they created and testing new technologies like AR are extremely helpful. These applications allow it to design and build buildings with ease and quicker, and they bring innovation to the world of architecture.
This trip gave us a clear notion on the importance of innovation to improve the building industry and increase live quality. It makes us more enthusiastic to go on exploring and experimenting in the future.

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