11 FEBRUARY 2025

ROSO COOP

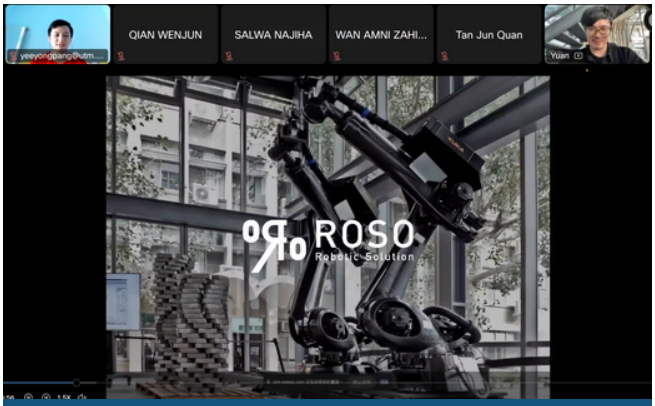
ROBOTIC SOLUTION

www.rosocoop.com

SUMMARY

On Tuesday, 11th February 2025, Section 09 students from the Faculty of Computing participated in a virtual industry visit with ROSO (Robotic Solution) via Webex, accompanied by Dr. Pang Yee Yong. The session was led by Prof. Yuan, who actually has an architectural background.

ROSO specializes in innovative robotics technology and computational design, focusing on intelligent construction processes and solutions. Their work integrates machine learning, IoT, and real-time monitoring systems, enabling robots to adapt to complex tasks with exceptional precision. The interdisciplinary team includes experts in art, design, and engineering and they collaborate to transform the construction industry through continuous innovation and excellence.



"Screenshot from Webex Meeting – Credit: Webex Recording.

KEY AREA EXPLORED

- **3D Printing** : Used for a large scale, complex and custom design
- **Robotic Fabrication Lab** : Develop robot that perform complex fabrication task with precise movement

ISSUE DISCUSSED

- **Material Optimization :** Minimize material waste through precise fabrication and efficient design
- **Eco-Friendly material :** address enviromental impact by using recycable and biodegradable material
- **Safety :** Robot equipped with sensor to prevent accident due to unexpected situation and helping in reducing workers workload by allowing them to focus on task that require human judgement.

GROUP MEMBERS :

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GROUNDBREAKING TECHNOLOGY

ROSO Comperation delves into the field of robotic computational design and digital fabrication, pushing the boundary and revolutionize the construction and architechture for various possibility. Here are some of the project :

1. **Robotic 3D Printed Formwork :** Print geometrically complex structure then cast concrete within the framework to increase efficiency and minimizing formwork waste.
2. **In-Situ Robotic Fabrication :** Roso bring the robot to the construction site that can move autonomously for more flexibility like the lifting assistant to lift the heavy object
3. **Glass Robotic :** By using laser heating or induction heating technology to heat material precisely, ROSO create a 3D printing system using glass at room temperature to explore possible design that is not possible with traditional glassblowing.

REFLECTION

Our visit session with ROSO Robotic Solutions via Webex that organised by Dr. Pang Yee Yong was an eye-opening experience, offering valuable insights into the advancements in automation and robotics. From the moment we arrived, we could sense the company's commitment to cutting-edge technology and engineering excellence.

One of the most impressive aspects of ROSO was its focus on intelligent automation, AI-driven robotics, and precision engineering. The company specializes in developing highly efficient robotic solutions for industrial applications, optimizing productivity, safety, and operational efficiency. Their integration of machine learning, IoT, and real-time monitoring systems ensures that their robots can adapt to complex tasks with remarkable accuracy.

Overall, ROSO Robotic Solutions was incredibly inspiring. It provided us with a deeper appreciation for robotics in industrial automation and sparked new ideas for potential applications and collaborations. Their dedication to continuous innovation and excellence in engineering is a testament to the future of smart manufacturing

All images are sourced from ROSO 機器人建造實驗室 on Facebook.
Source: ROSO 機器人建造實驗室 Facebook Page

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