

In the spotlight

HRI Grounding: Evidence That Operators Authorize and Correct AI Multi-Robot Plans Through a Generated Supervisory Interface

IEEE Robotics and Automation Letters

SUTD Authors: Pattaraorn Yu, Ishaan Nair, Song Youngbin, Soh Gim Song

When robots work in hazardous environments, a mistaken action can cause harm that cannot be undone. People therefore need a practical way to check AI plans and intervene before robots act. We developed HRI Grounding, a system that automatically turns an AI plan into an interactive control panel showing which robot will do what, and to which target. People can review, correct and approve each planned action before a robot carries it out. In simulated rescue and warehouse missions, 16 participants without robot-planning expertise recovered 85 of 96 missions that would otherwise have failed. A separate study found 28% shorter mission completion times and 47% lower reported workload than manual control.

These findings show how automatically generated controls can support human oversight, an important capability for AI and robotics operations where mistakes could have irreversible consequences.



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- Pattaraorn Yu

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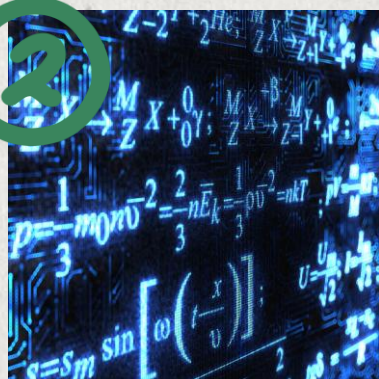


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SUTD Authors: Phat Nguyen, Ngai-Man Cheung

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2025 IEEE International Symposium On Information Theory

SUTD Authors: Song Wentu, Cai Kui, Tony Quek Q. S.

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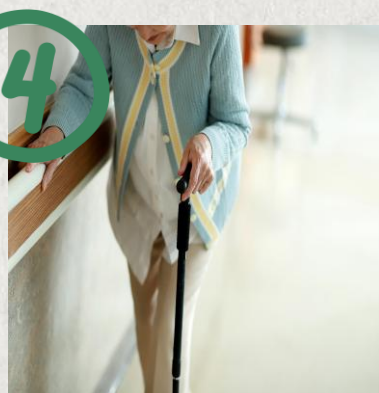


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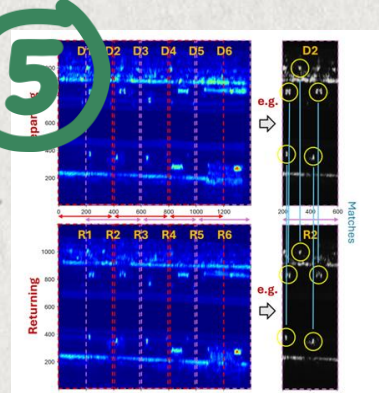


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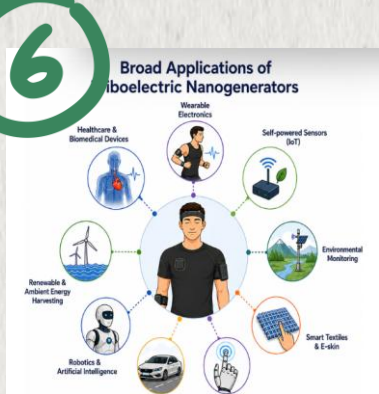


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SUTD Authors: Charith Premachandra, Tan U-Xuan

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Advanced Energy Materials

SUTD Authors: Abhinav Mahapatra, Tan Ying Yi, Glenn Chong, Low Hong Yee

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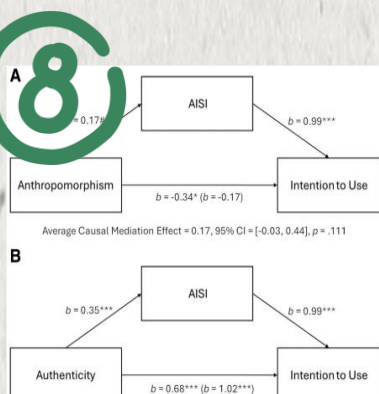


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SUTD Authors: Lim Wei Sheng, Siddharth Ganesh, Soh Gim Song

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SUTD Authors: Sou Ka Lon, Yow Wei Quin, Matthew Lau Zhi Yuan, Ouyang Fuxi

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