

In the spotlight

Architected Design and Fabrication of Soft Mechanical Metamaterials

Advanced Intelligent Systems

SUTD Authors: Thileepan Stalin, Aby Raj Plamootil Mathai, Naresh Kumar Thanigaivel, Aaron Chooi, Arturo Castillo Ugalde, Pablo Valdivia Y. Alvarado, Elgar Kanhere, Saikrishna Dontu, Gumawang Hiramandala

Nature showcases numerous examples of ParaSym (Parallel Symmetric) arrangements—vertical structures aligned in parallel to maximize surface area. For instance, the leaves of rice plants exhibit a similar structure that guides water droplets along their surfaces. However, replicating these complex, hierarchically organized structures presents significant challenges, necessitating innovative fabrication techniques.

Prof. Pablo Valdivia y Alvarado and his research team have pioneered a new design and extrusion-based fabrication approach to create soft metamaterials for applications in soft robotics and wearable technologies. Their work in additive manufacturing advances the design and production of metamaterial structures, unlocking engineered solutions with unique properties for a wide range of applications.



“The research team have pioneered a new design and extrusion-based fabrication approach to create soft metamaterials for applications in soft robotics and wearable technologies.”

- Research Team

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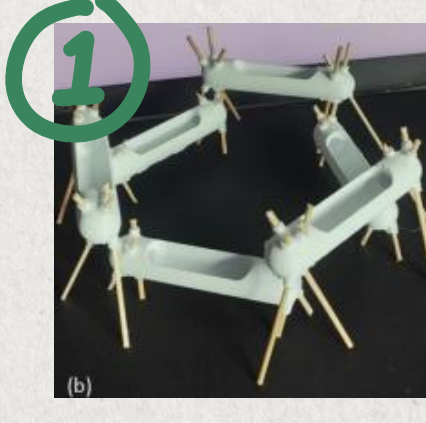
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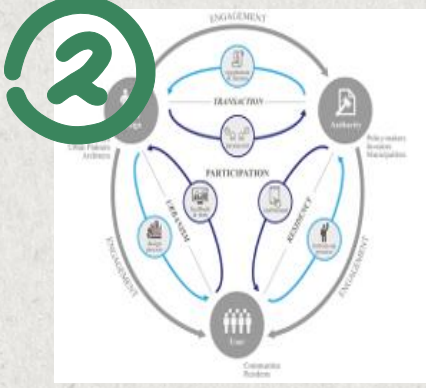
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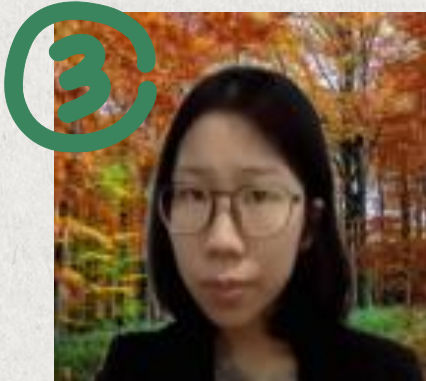
SUTD Authors: Sunilkarthik Ezhilarasu, Arlindo Silva, Carlos Banon
Engineering Product Development (EPD), Architecture and Sustainable Design (ASD)



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Cities

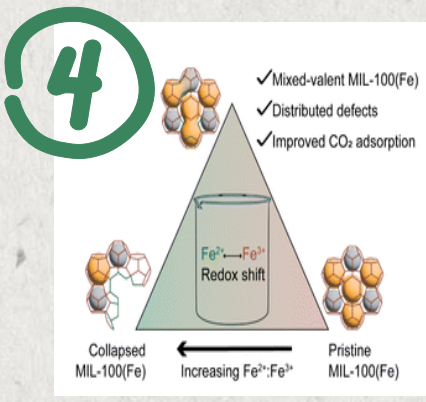
SUTD Authors: Cem Ataman, Simon Perrault
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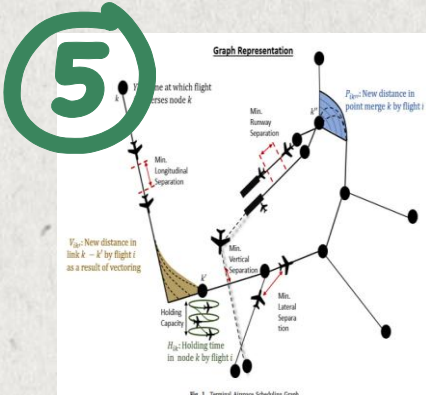
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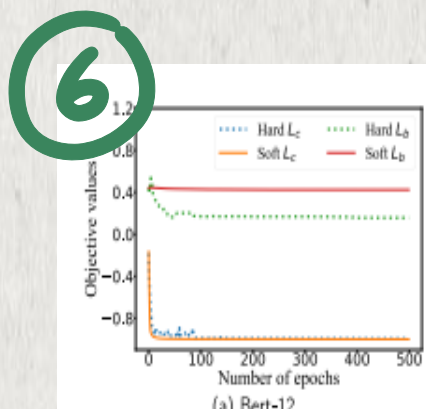
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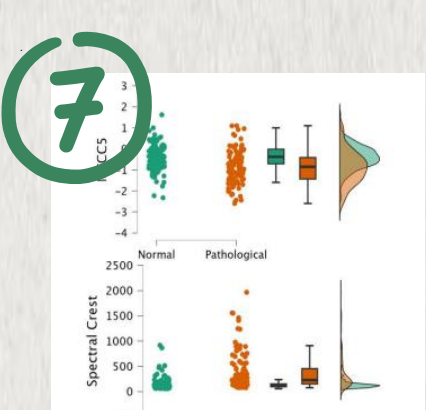
SUTD Authors: Wayne Ng, Nuno Antunes Ribeiro
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SUTD Authors: Wei Pengcheng, Chen Binbin
Information Systems Technology and Design (ISTD)



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2024 International Conference On Signal Processing And Communications, SPCOM 2024

SUTD Authors: Michelle Boo, B. T. Balamurali, Jer-Ming Chen
Science, Mathematics and Technology (SMT)



Line Spectral Estimation via Unlimited Sampling

IEEE Transactions On Aerospace And Electronic Systems

SUTD Authors: Qi Zhang, De Wen Soh
Information Systems Technology and Design (ISTD)