







Targeted control of fast prototyping through domain-specific interface

Yu-Zhe Shi^{1,2}, Mingchen Liu³, Hanlu Ma⁴, Qiao Xu¹, Huamin Qu^{2,4}, Kun He³, Lecheng Ruan¹, Qining Wang¹

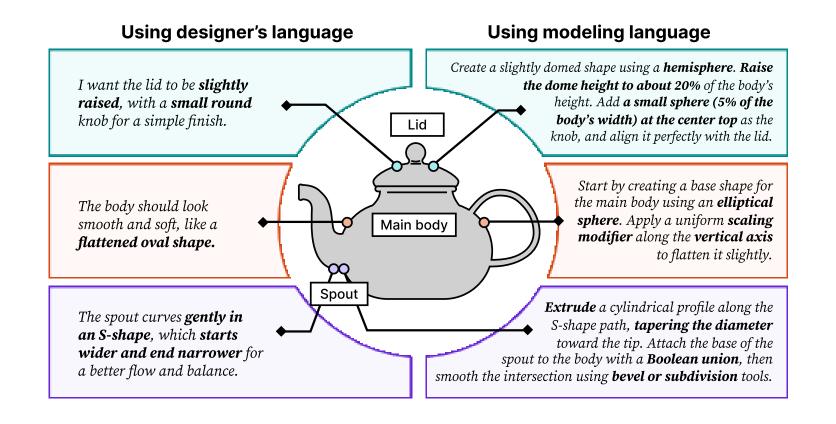
¹Department of Advanced Manufacturing and Robotics, Peking University

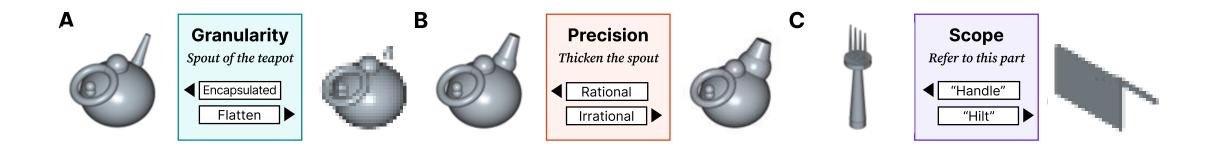
²Department of Computer Science and Engineering, The Hong Kong University of Science and Technology

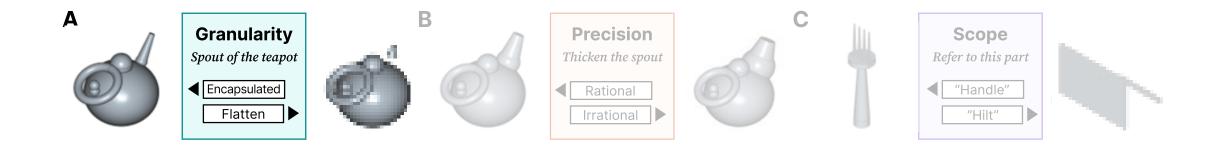
³School of Computer Science and Technology, Huazhong University of Science and Technology

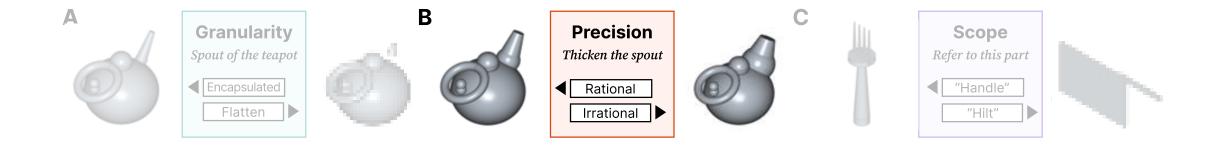
⁴Division of Emerging Interdisciplinary Areas, The Hong Kong University of Science and Technology

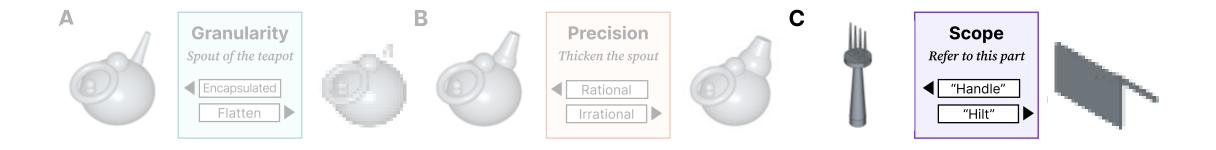
Designers' language vs. modeling language



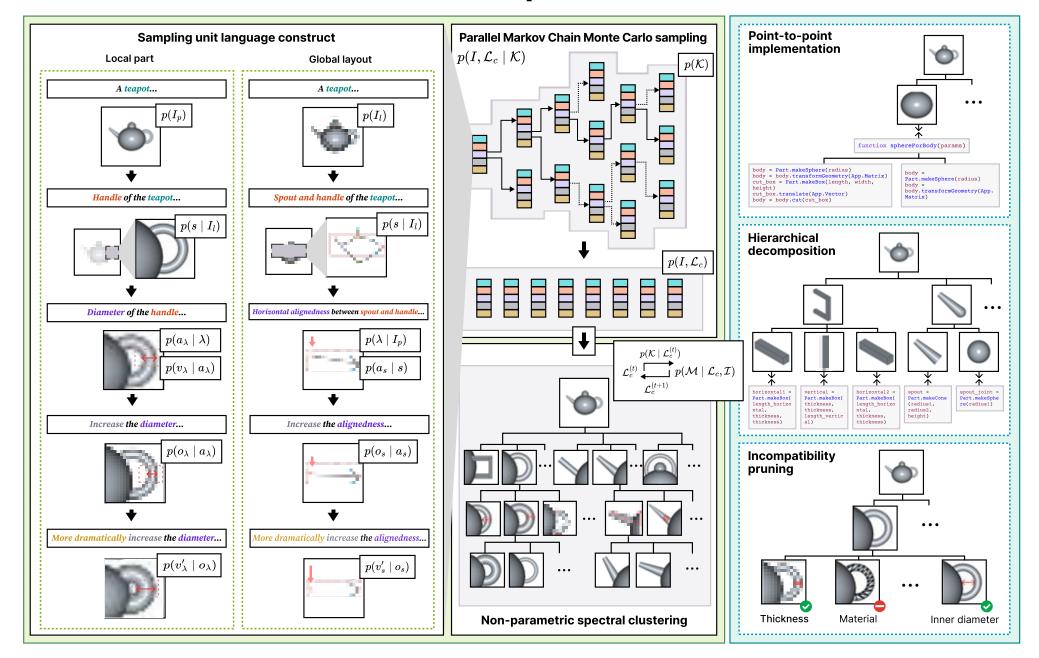




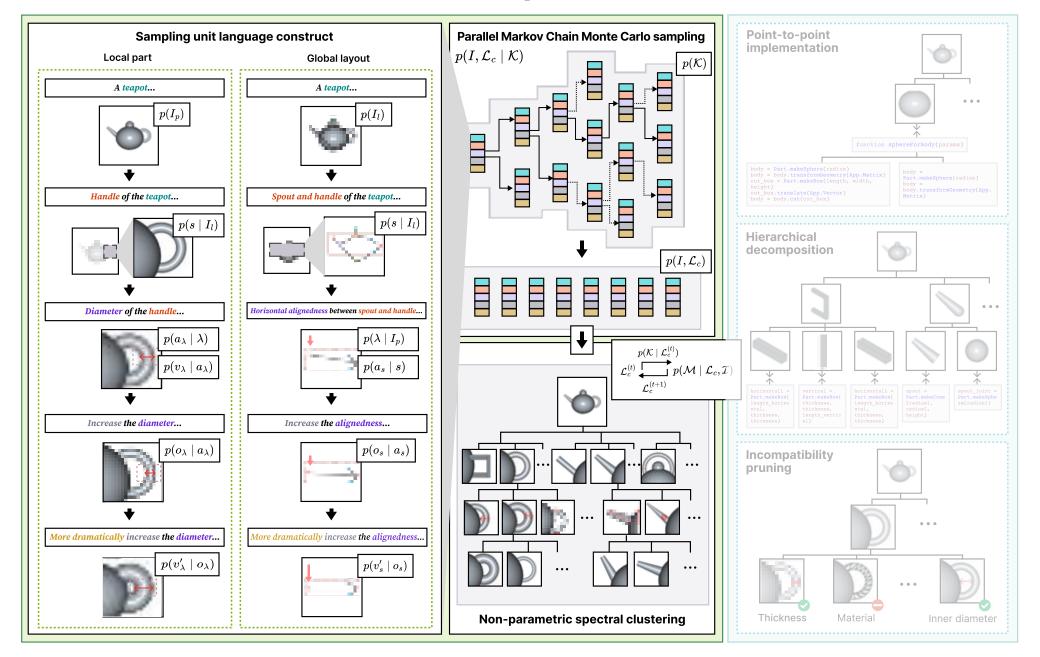




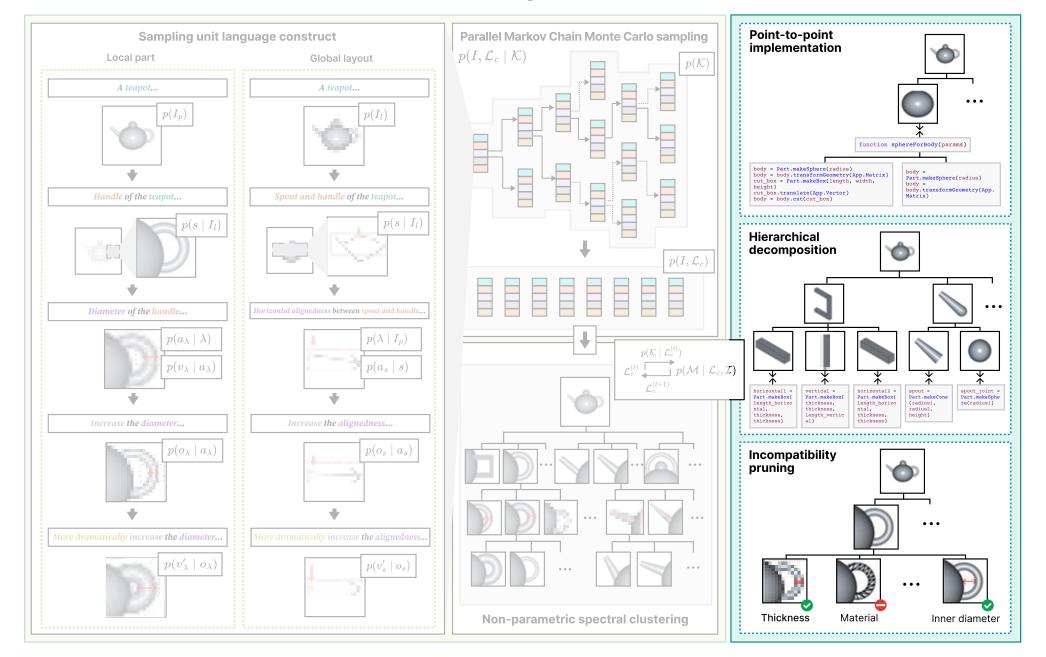
Representation and domain adaptation



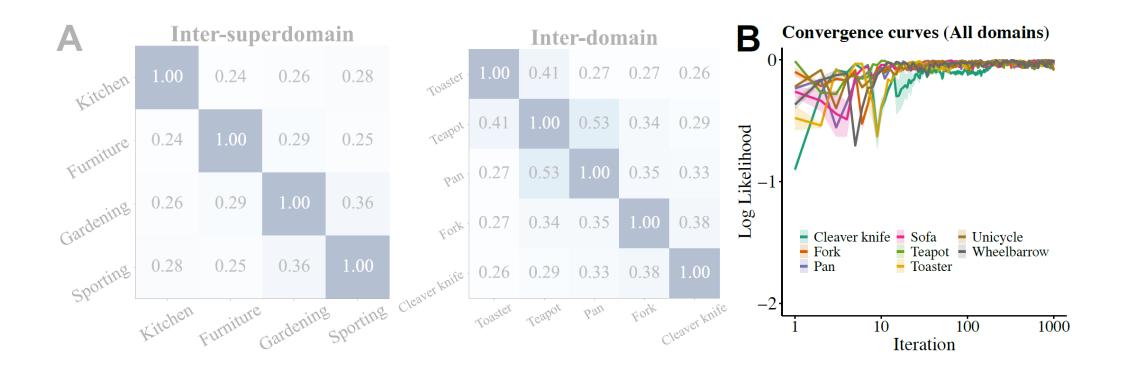
Representation and domain adaptation



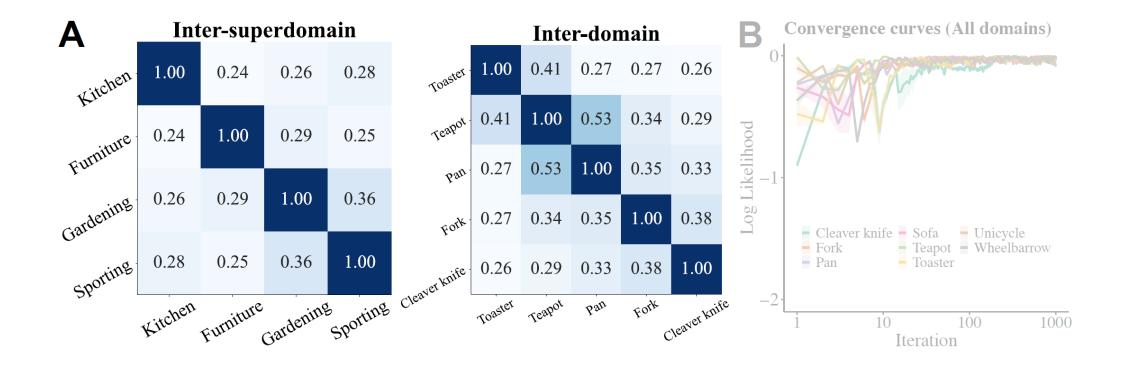
Representation and domain adaptation



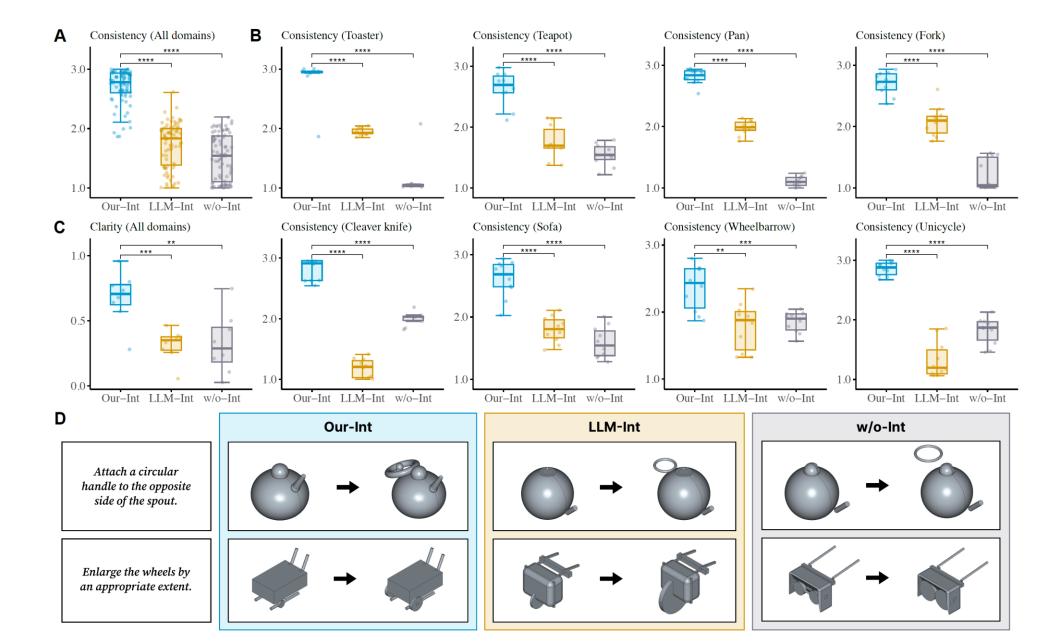
Running status of the domain adaptation algorithm



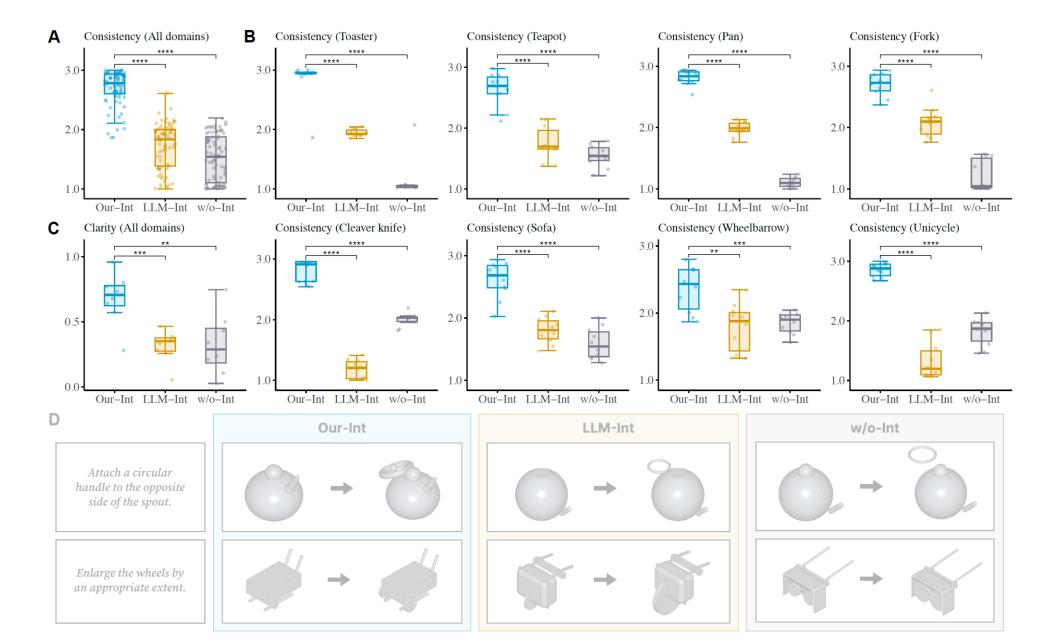
Running status of the domain adaptation algorithm



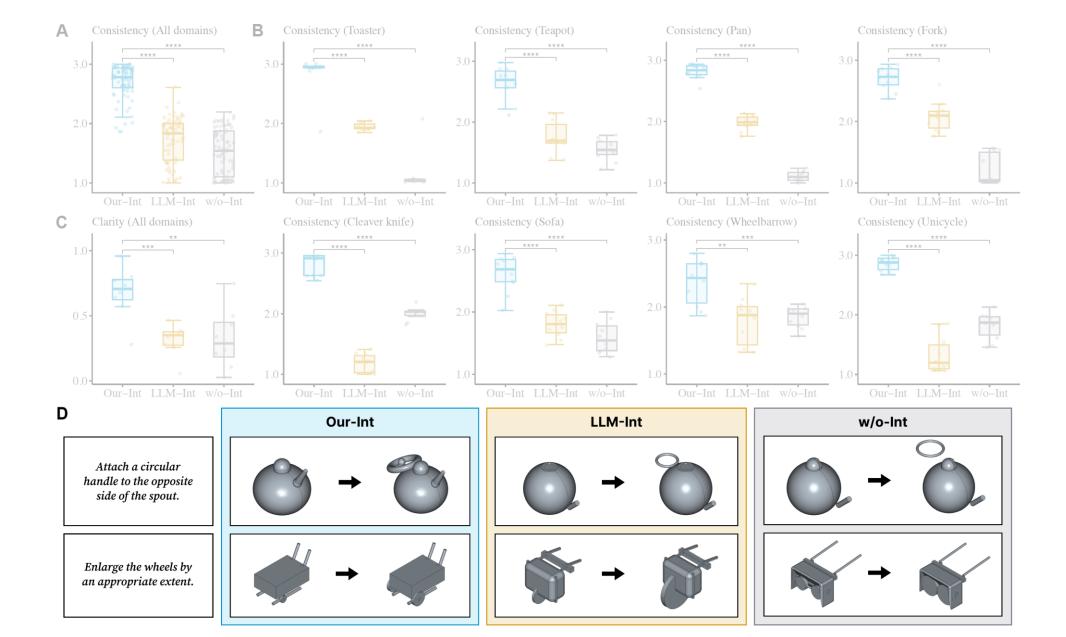
Results of the targeted control assessment



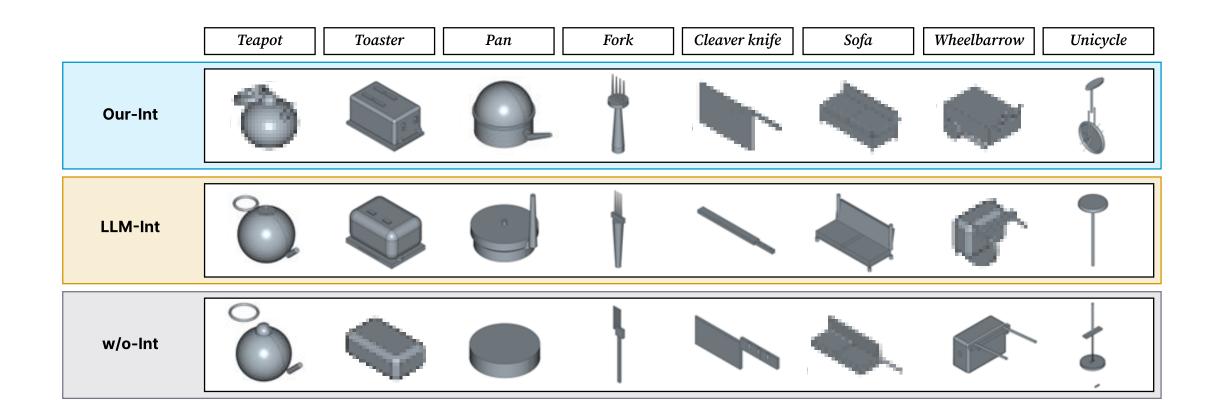
Results of the targeted control assessment



Results of the targeted control assessment



Resulting models of the fast prototyping



Takeaways

We identify the problem of the targeted control of fast prototyping through the gaps between the designers' and modeling languages.

Takeaways

We identify the problem of the targeted control of fast prototyping through the gaps between the designers' and modeling languages.

We propose an interface as a medium between the two languages, and develop an algorithm for its automated domain specification.

Takeaways

We identify the problem of the targeted control of fast prototyping through the gaps between the designers' and modeling languages.

We propose an interface as a medium between the two languages, and develop an algorithm for its automated domain specification.

Our approach has the potential to function as an auxiliary module for LLMs, enabling precise and effective targeted control of prototypes.

Thank you!