



## Sketch-2-3: A Sketch-based 3D design modeling system for quick design prototyping and early stage design ideation

**Sketch-2-3 is an easy-to-use 3D design modeling system that allows users to quickly externalize preliminary ideas, rapidly explore the design space across multiple dimensions, and visually communicate and record abstract thought in a digital medium.**

Early-stage design is an essential part of the design process, as it allows designers to conceive and explore preliminary ideas while informing downstream processes. While sketching is an efficient means for expressing ideas, it is limited to a single viewpoint and also requires good drawing skills. There currently exists a lack of a way to record fleeting ideas and rapid exploration in a design space.

Researchers at Purdue University have developed Sketch-2-3, an easy-to-use 3D design modeling system, which is particularly useful during early stage design for quickly externalizing preliminary ideas, rapidly exploring the design space across multiple dimensions, and visually communicating and recording abstract thought in a digital medium. The technology described includes the ability to create, manipulate, and represent a design model at different levels of detail. Given the three-dimensionality of the design representations, it allows users to create a design model from a bottom up approach, where they can individually model different shapes, aggregate those shapes into specific functional components or parts, and assemble the parts into a holistic design model.

### Advantages:

- Flexible
- Rapid exploration and design of ideas

### Potential Applications:

- Industrial Design

### Technology ID

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### Category

Artificial Intelligence & Machine Learning/Multimodal & Generative Visual AI  
Robotics & Automation/3D Perception & Modeling for Automation

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### View online



-Product Development

-Graphic Design

**TRL: 6**

**Intellectual Property:**

Provisional-Patent, 2016-11-01, United States

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CIP-Patent, 2017-11-23, United States

CON-Patent, 2019-12-24, United States

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