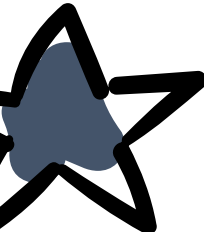


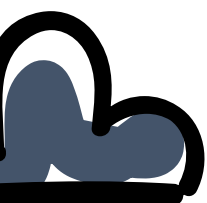
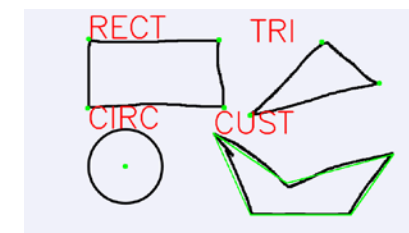
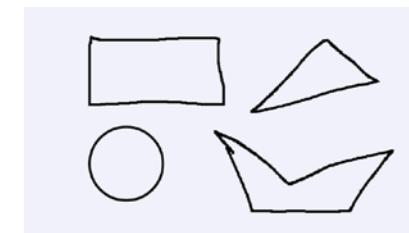
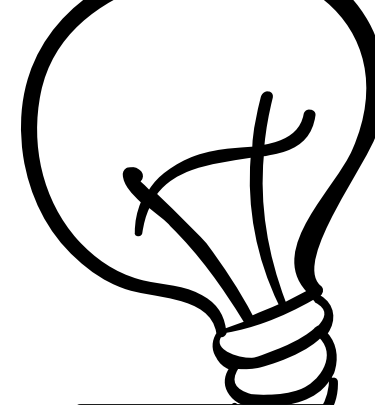
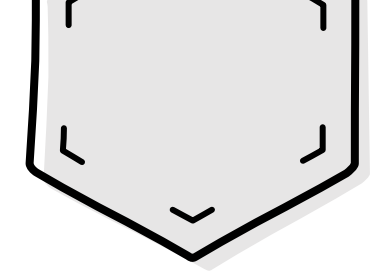




CSG-Based ML-Supported 3D Translation of Sketches into Game Assets for Game Designers

- Algorithm Development:
 - Developed algorithms to interpret hand-drawn sketches and convert them into 3D building models using CSG, improving automation by 40%.
 - Machine Learning Implementation:
 - Implemented ML techniques for edge detection and point decimation, identifying lines, arcs, and intersections to transform them into CSG primitives.
 - Texture Generation:
 - Integrated the diffuser model for texture generation, enhancing the visual quality and realism of the generated 3D assets.
 - Optimization:
 - Optimized model refinement techniques to reduce rendering time of complex structures by 20%.
 - Awarded NYU DURF \$1,100 grant to support research on integrating ML and procedural modeling techniques for game design.
 - Co-authored a paper with Prof. [Gizem Kayar](#) currently under review by "The Visual Computer" journal, with myself as the first author.
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Raw Sketch Input

Sketch Recognition

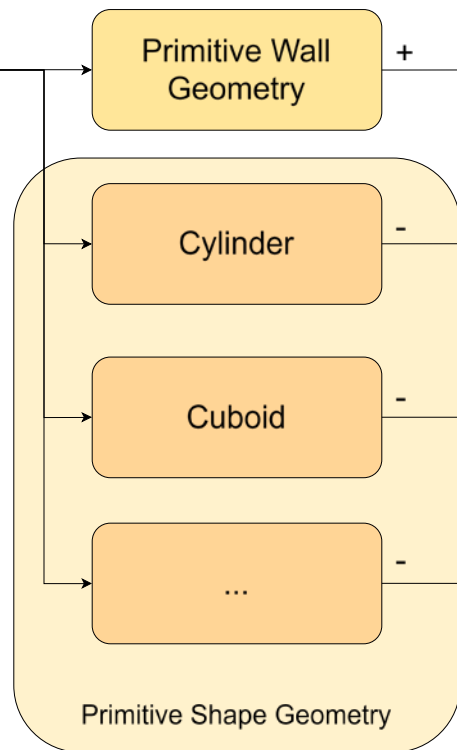
Processed Sketch Output

Geometry Creator

Object Composition

Text Processor

Text Output

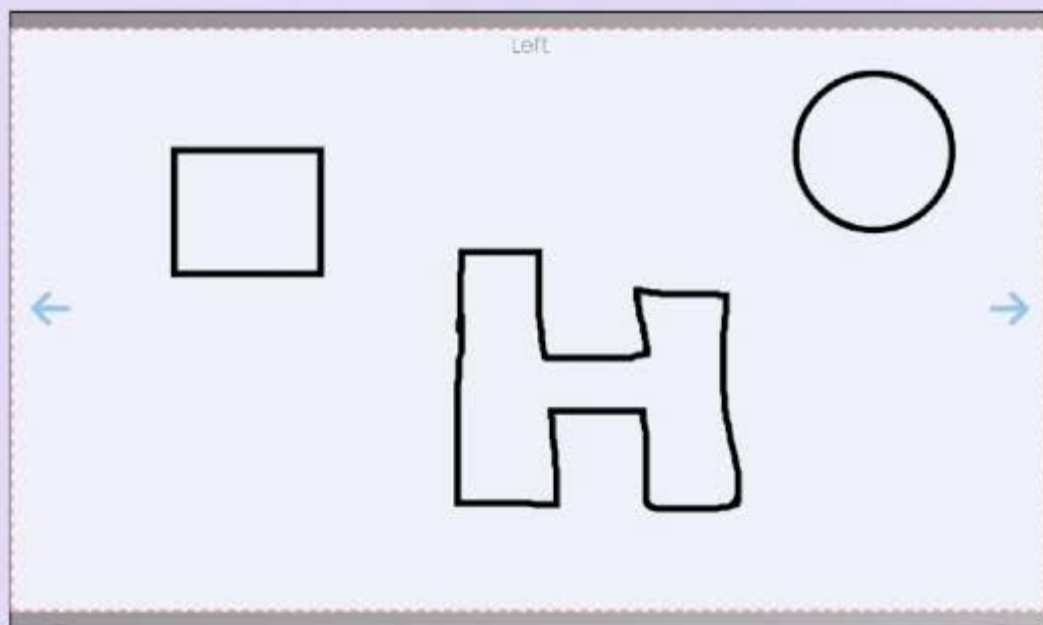


Processed Wall Geometry

Decorations

Rendering System

Welcome to our research of **sketch**.



rusty stone texture

Generate