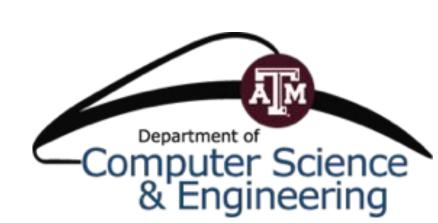


Tools Instructor Help

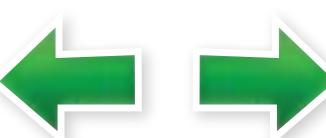


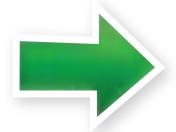
2 Just Truss Me: Symbol Recognition























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Steps to Recognition:

- 1. record points as pen traces on screen and add points to a new stroke
- 2. send each new stroke to PaleoSketch to find primitive shapes $(/, \bigcirc, \triangle, \uparrow)$, etc.)
- 3. push shape onto stack
- 4. send shapes on top of the stack to complex shape recognizers that apply geometric constraints
- 5. combine into complex shape

Why We Recognize:

Truss mechanics are an essential concept to early engineering education. Diagrams are the natural way of representing trusses, but they are exceptionally time-consuming to grade.

We introduce Mekanix, a pen-based sketch recognition system that can recognize, correct, and provide feedback on a student's hand-drawn truss diagram in real time.

Example Geometric Constraints: Roller Support midpoints of top intersection circles must circles must bottom-most circles must be smaller than be similar in be below and circles must line must be point and bottom midpoint form horizontal horizontal the triangle reasonably near size to one the triangle must form another line perpendicular line Other Recognizable Shapes: 000