# Polyhedral Edge Knots

Carlo H. Séquin (2021):  3D-printed knot strands;  5" diameter.





Cube Edge Knot;  $S_4$ symmetry

→ Alternating Knot $12a_{1288}$

Cuboctahedral Edge Knot

$D_3$ symmetry

Mathematical knots can never exhibit the symmetries of the regular or semi-regular polyhedra. But they can still be shaped to convey the look of such polyhedral bodies, if they mostly follow the corresponding wire-frame edges.  To pass through all edges at least once, we need to construct a Eulerian circuit on a graph with all nodes of even valence; this can be done by judiciously doubling some of the given edges or simply doubling all of them.