Reassembly of broken objects

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The problem of reassembling broken objects appears in a broad range of applications, including jigsaw puzzle assembly, archaeology (broken pots and statues), surgery (broken bones and reassembly of histological sections), paleontology (broken fossils and egg shells), and anthropology (more broken bones). I will discuss recent progress on such problems, based on advances in the mathematical apparatus of Lie transformation groups and groupoids, moving frames, differential invariant signatures, and invariant numerical approximations.

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