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History of 3D printing

The fascinating history of 3D printing, from its inception to the remarkable developments we've witnessed over the years.

Inception & Early Innovations (1980–1995)

The journey begins in 1981, when Dr. Hideo Kodama at the Nagoya Municipal Industrial Research Institute published groundbreaking research on a technique he called "rapid prototyping." His work described a layer-by-layer approach intrinsic to 3D printing. Although Dr. Kodama missed the patent deadline, his research laid the foundation for what was to come1.

Before this, hints of stereolithography-like processes appeared in earlier research papers from the 1960s and 1970s. In a satirical 1974 New Scientist column, David Jones (writing under the name Daedalus) humorously described the SLA process, unknowingly foreshadowing its future impact1.

The Journey to Democratization (1996–2009)

During this period, 3D printing evolved from an industrial process to a tool accessible to a broader audience. Key milestones include:

- **1984:** Chuck Hull invented Stereolithography (SLA), founding 3D Systems and releasing the first 3D printer, the SLA-1, in 1987.
- **Late 1980s and early 1990s:** Other 3D printing technologies emerged, including Fused Deposition Modeling (FDM), Selective Laser Sintering (SLS), and PolyJet. These methods used different materials and techniques to create 3D objects layer by layer.
- Democratization: The expiration of critical patents in the 2000s and 2010s led to the rise of low-cost and open-source 3D printers like RepRap and MakerBot. These affordable machines made 3D printing accessible to hobbyists, educators, and small businesses.

FDM & SLA Patents Expire (2009–2014)

- **2009:** The expiration of key patents, particularly those related to FDM and SLA, triggered a worldwide democratization of 3D printing. Suddenly, enthusiasts and professionals alike could explore this technology without

barriers.
- **2015–Present:** The journey continues with exciting developments in metal 3D printing, bioprinting, and even construction. We've witnessed mind-bending advancements that push the boundaries of what's possible.

From rapid prototyping to organ printing, 3D printing has transformed industries and sparked creativity worldwide. It's a testament to human ingenuity and the power of layer-by-layer innovation.

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