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# Responsible AI, Computational Design, and Value-Aware Engineering

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As artificial intelligence becomes increasingly involved in design, prediction, decision-making, and autonomous action, engineering questions can no longer be separated from questions of explainability, intentionality, values, responsibility, and human oversight. This issue of Big.D examines this emerging intersection through research connecting computational methods, engineering design, artificial intelligence, and philosophical frameworks.

Several contributions directly address the foundations of responsible intelligent systems. Studies of autonomous agency in AI-assisted architecture, the observability and explainability of autonomous decisions, recursive value alignment, and coherence between values and computational logic investigate how concepts traditionally explored in philosophy can inform the design and evaluation of technical systems. In this context, philosophical analysis functions not as an isolated theoretical exercise, but as a framework for defining requirements, identifying limitations, and guiding responsible technological implementation.

Other papers translate conceptual structures into computational and engineering methodologies. Ontological modeling provides formal knowledge representation for design-innovation ecosystems, while computational analysis of decorative patterns connects cultural interpretation with quantitative and semantic methods. Parametric approaches to sustainable building design demonstrate how value systems and environmental objectives can be translated into computational design parameters.

The interaction between cultural knowledge and emerging technology is further explored through AI-generated educational content and a collaborative framework connecting traditional craft philosophy with digital fabrication and smart manufacturing.

Together, these studies point toward a broader concept of value-aware engineering. Responsible technology requires not only higher algorithmic performance, but also mechanisms for interpretation, alignment, governance, and meaningful human participation.

This issue therefore reflects an important component of the mission of Big.D: advancing design-enabled engineering while creating space for interdisciplinary frameworks that directly contribute to the design, evaluation, governance, and implementation of intelligent and emerging technologies.