Research Statement

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My research examines the emergence of practitioner-authored computational tools as a distinct mode of architectural knowledge production. As artificial intelligence lowers the technical threshold for software development, a new category of practitioner is becoming possible: the architect who does not merely adopt tools built by others, but authors tools shaped by domain expertise accumulated through practice.

This distinction, between tool-using and tool-making, is the central concern of my work. Tool-using treats software as a fixed instrument; tool-making treats it as a medium for encoding professional judgment. The difference is not technical fluency but epistemic agency: who decides what the tool knows, what it optimizes for, and what values it embeds.

My practice-based research methodology treats the architecture office as a laboratory. Over the past year, I have built a suite of AI-assisted workflow tools, spanning energy modeling, acoustic simulation, structural system analysis, and client qualification, without a formal programming background, using large language models as collaborative development partners. Each tool represents a hypothesis about where architectural expertise is currently lost to generic software, manual process, or institutional inertia.

The findings challenge two prevailing assumptions: that meaningful software development requires technical specialization, and that AI tools are most valuable as productivity accelerators. The more significant opportunity is authorship, the capacity for practitioners to build instruments that reflect the specific judgments, values, and risk tolerances of architectural practice in ways that commercial software cannot.

This work sits at the intersection of design research, professional practice, and human-computer interaction. Its pedagogical implications are immediate: if tool-making is a learnable competency for practitioners without programming backgrounds, it belongs in professional education alongside drawing, specification writing, and project management.