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## Procedural Parametric Modeling of Balinese Architecture

### Abstract

*Traditional Balinese architecture is based on ancient Bali-Hindu philosophy. The underlying architectural principles are complex, containing intrinsic "parametric rules" based on both a philosophical and a building tradition. The parameters are in relation to the religious belief system as well as being derived from the bodily dimensions of the "head" of a building. These parametric rules were based on literature and additional assumptions, and then implemented in a digital simulation using a shape grammar. In this project, we aim at a procedural parametric model of traditional Balinese architecture that includes the following aspects: a) verification with photogrammetry b) comparison of Balinese design rules with other related cultures, and c) adaptation for contemporary architectural design needs.*

**Keywords:** Procedural modeling; parametric modeling; traditional Balinese architecture; intangible heritage; photogrammetry

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