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Engineering gravity via conformal field theory

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Holography posits a radical way to quantify gravitational physics. It claims that all information of a gravitational theory in a region of space can be encoded by a quantum field theory at the boundary of this region. Here I will discuss quantum gravity from this perspective. We will see how one can engineer - i.e., design and build - gravity through this relationship, using possible quantum theories on the boundary as materials for the undertaking. I will discuss how overcoming the challenging obstacles to this engineering task is paramount for deciphering mysterious properties of black holes and understanding fundamental aspects of quantum gravity.

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