Asymptotic normality for the size of graph tries built from M-regular tree labelings

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Abstract

Graph tries (G-tries), a generalization of classical tries, have been proposed in 2014 by P. Jacquet who considered mean and variance of the size of G-tries and conjectured a normal limiting distribution, as the number of independent label functions approaches infinity. This is one of the rare examples of a shape parameter of a random structure with variance considerably larger than the mean, but one nevertheless expects that a central limit theorem holds. In this talk, we will explain how to use the method of moments to prove this conjecture. The talk is based on joint work with my postdoc Tsan-Cheng Yu (National Chengchi University).

Keyword: probabilistic analysis of algorithms, tries, shape parameters, limit laws, method of moments