Covering Arrays and Perfect Hash Families of Higher Index

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Covering arrays (CAs) and perfect hash families (PHFs) are well-studied combinatorial objects, with CAs mainly applied in testing applications. A frequent question about CAs is, given parameters of a system, how small the array itself can be while still satisfying its defined coverage. Here we sample probabilistic, combinatorial, and algorithmic constructions when such objects contain *redundancy* (i.e., are of higher index).

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