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52246. *Maximal Subalgebras of Finite-Dimensional Algebras.*

We present a classification for maximal subalgebras of finite-dimensional algebras over a field  $\mathbb{K}$ . This is done by first classifying maximal subalgebras of semisimple algebras, and then lifting to the general case. When  $\mathbb{K}$  is nice (ex. algebraically closed), the classification can be understood in terms of the ideal structure of the Jacobson radical. For bound quiver algebras, this gives us nice presentations for subalgebras. Trivial/separable extensions feature prominently in the classification, and allow us to relate representation-theoretic properties of an algebra to those of its subalgebras via induction and restriction. If time permits, we discuss potential applications of our classification theorem, ex. to determining isomorphism classes of subalgebras, or minimal generating sets of algebras. (Received July 22, 2017)