Constructing examples of classifiable C*-algebras through factor groupoids

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Abstract: Since the mid 20th century, C*-algebras have exploded into a huge area of research that have found their way into many areas of mathematics. One of these areas is topological dynamical systems, and it is an interesting question to ask, given a C*-algebra, whether or not it can be constructed from an dynamical algebraic object known as a groupoid, and K-theory is a very useful tool when attempting to find such a groupoid. I will begin this presentation with a short introduction to C*-algebras, K-theory, groupoids, and Bratteli diagrams. I will then describe how to construct a certain quotient space of the path space of a Bratteli diagram to create a factor groupoid whose C*-algebras has predetermined K-theory data, and whose unit spaces tend to exhibit self-similar behaviour. If time permits, I will discuss how to compute the K-theory of certain extensions of Cantor minimal systems considered by Robin Deeley, Ian Putnam, and Karen Strung, the constructions of which involve Bratteli-Vershik systems and iterated function systems.