



## The ARCS Seminar

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# Applications of Algebra to Software Engineering

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**Abstract:** This will be more of a conceptual talk; nothing research level. I plan to present some of the following ideas:

1. Compositional programming and algebraic structure as a tool for abstraction.
2. Algebraic data types, the semiring of types, and related constructions and uses in meta-programming.
3. Programming with monoids, semigroups, and other standard algebraic structures.
4. Categorical structures: adjunctions, functors, monoidal/applicative functors, and monads
5. Free structures and universal constructions in software engineering.

**Time and Place:** Wednesday, February 8 from 4:30–5:30PM (Mountain Time Zone) in ENGR 187



The Rings and Wings Seminar is an activity of ARCS.  
<https://arcs-center.org>