ECE 594/694 T: Alternative Programming Paradigms
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Learn Interesting Programming Languages

Learn how to use them, how they work, and how to create them for yourself.

These languages are very different from the familiar ones. Not just different in the way Java and C++ are different, but providing genuinely different paradigms of programming. A new programming paradigm provides a new set of mental tools for thinking about and solving problems. Hot New programming languages are appearing all the time; Hot New start-ups are using them and want programmers with a broader range of experience than ever before. Expand your Mind!

The big topics:
    LISP, the classic programming language for A.I. and rapid development:
        Programming in Lisp,
        How Lisp works,
        Creating your own version of Lisp.

    Purely Functional Programming:
        Programming without the use of variables, everything is a constant,
        Support for endless (seemingly infinite) data structures,
        Even unterminated recursion makes sense,
        Actually write useful programs in 4 lines of code.

    Prolog, Programming with Logic
        Programming with collections of facts (Predicates),
        Using deterministic backtracking to solve problems,
        The good and bad of prolog,
        Create your own logic programming language.

The smaller topics include studies of:
    Occam, a very static parallel programming language,
    Javascript, for serious use, not just prettifying web pages,
    Smalltalk, an extremely object-oriented language.