

# 15-213

*“The course that gives CMU its Zip!”*

## Code Optimization II

### Feb. 19, 2008

### Topics

- Machine Dependent Optimizations
  - Understanding Processor Operations
  - Branches and Branch Prediction

# Getting High Performance

## Don't Do Anything Stupid

- Watch out for hidden algorithmic inefficiencies
- Write compiler-friendly code
  - Help compiler past optimization blockers: function calls & memory refs.

## Tune Code For Machine

- Exploit instruction-level parallelism
- Avoid unpredictable branches
- Make code cache friendly
  - Covered later in course

# Modern CPU Design

