

# CS466/666: Design and Analysis of Algorithms

Fall 2014

# CS466/666

- Instructor: Bin Ma, ~~DC3345~~, binma@...
  - Office hours after classes (~~TF 10:30-11:30~~)
- TAs:
  - Chen Fei Du, (cfdu)
  - Chuan Guo, (c3guo)
  - Office hours TBA.
- Students:
  - Undergraduate 50+
  - Graduate: 10+

# Communication

- Course website:
  - <https://www.student.cs.uwaterloo.ca/~cs466/>
- Newsgroup:
  - Piazza.
  - News and QAs are posted on Piazza.

# Course Outlines

- Review of key points in CS 341
- Online Algorithms
- Randomized Algorithms
- Amortized Analysis
- NP-Completeness
- Approximation Algorithms
- Parameterized Algorithms

# Topics Learned in CS341

- Analysis of algorithms (CS240?)
  - Worst case, average case
- Algorithm design Techniques
  - recursion
  - divide & conquer
  - invent (or augment) a data structure
  - greedy algorithm
  - dynamic programming
- Undecidability, Intractability, Lower Bound
  - Some problems are non-computable (e.g. halting)
  - Some problems are hard to compute (e.g. NP-hard)
  - One can only expect so much on a problem (lower bound).