About

- Instructor: Uri Keich

    - keich@cs, X5-7017
    - 4159 Upson Hall

- Time & space: Tue & Thu 1:25-2:40, Hollister 362

- Web pages

    - `http://www.cs.cornell.edu/Courses/cs426/2008sp/`
    - `https://cms3.csuglab.cornell.edu/`

- Books on reserve:

    - Genomes - T.A. Brown (also accessible via pubmed)
    - An introduction to bioinformatics algorithms - Neil C. and Pavel A. Pevzner
    - Biological sequence analysis: probabilistic models of proteins and nucleic acids - Richard Durbin et al.
    - Statistical methods in bioinformatics : an introduction - Warren Ewens, Gregory Grant.

- Your course grade will be the arithmetic mean of your final grade and your normalized average homework score.

Syllabus

- Biological introduction

- Pairwise sequence alignment

    - Scoring matrices, dynamic programming

- Similarity search: BLAST

- Significance analysis of local alignment

- Multiple sequence alignment

- Phylogenetic trees

- Genome rearrangements: reversal distance

- Motif finding

    - Pattern and profile based finders
    - MITRA, Gibbs Sampler, Expectation Maximization
    - Significance analysis

- Mass spectrometry

- Gene arrays

- Gene finding