
CS 6220: DATA-SPARSE MATRIX COMPUTATIONS

Lecture 1	8/22	Introduction
Lecture 2	8/24	FFT
Lecture 3	8/29	Finish FFT, start FMM
Lecture 4	8/31	FMM
Lecture 5	9/5	Rank structured matrices (key tools)
Lecture 6	9/7	Rank structured matrices (algorithmic structure)
Lecture 7	9/12	Krylov methods (Lanczos and Arnoldi)
Lecture 8	9/14	Krylov methods (solving $Ax = b$)
Lecture 9	9/19	Krylov methods (solving $Ax = b$)
Lecture 10	9/21	Krylov methods (eigenvalues)
Lecture 11	9/26	Randomized algorithms (intro and range finding)
Lecture 12	9/28	Randomized algorithms (basic factorizations)
Lecture 13	10/3	Randomized algorithms (CUR and leverage scores)
Lecture 14	10/5	Randomized algorithms (streaming algorithms)
Lecture 15	10/10	No class, Fall Break
Lecture 16	10/12	Randomized algorithms (LSRN)
Lecture 17	10/17	Randomized algorithms (sparse sketching matrices)
Lecture 18	10/19	Randomized algorithms (flex)
Lecture 19	10/24	Sparse recovery (intro and applications)
Lecture 20	10/26	Sparse recovery (LASSO and BPDN)
Lecture 21	10/31	Sparse recovery (compressed sensing)
Lecture 22	11/2	Sparse recovery (compressed sensing)
Lecture 23	11/7	(instructor travel, flex)
Lecture 24	11/9	(instructor travel, flex)
Lecture 25	11/14	Low rank plus sparse
Lecture 26	11/16	Fast Laplacian solvers
Lecture 27	11/21	Fast Laplacian solvers
Lecture 28	11/23	No class, Thanksgiving
Lecture 29	11/28	Student presentations
Lecture 30	11/30	Student presentations