

DS-GA 3001.03: Extended Syllabus Lecture 7

Optimization and Computational Linear Algebra for Data Science (Fall 2016)

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November 8, 2016

- Graph Laplacian – Section 2.3. before Remark 2.12 (on page 37) of [1]. See also Remark 3.3. [1].
- Spectral Clustering – Section 3.2. and 3.3. of [1].
- Convexity (Convex Sets and definition of convex function) – Section 1 of Notes “Convex optimization” of [2].

References

- [1] Afonso S. Bandeira, *Ten Lectures and Forty-Two Open Problems in the Mathematics of Data Science*, available at <http://www.cims.nyu.edu/~bandeira/TenLecturesFortyTwoProblems.pdf>
- [2] Carlos Fernandez-Granda, *Lecture Notes of “Optimization-based Data Analysis”*, available at http://www.cims.nyu.edu/~cfgranda/pages/OBDA_spring16/notes.html, 2015