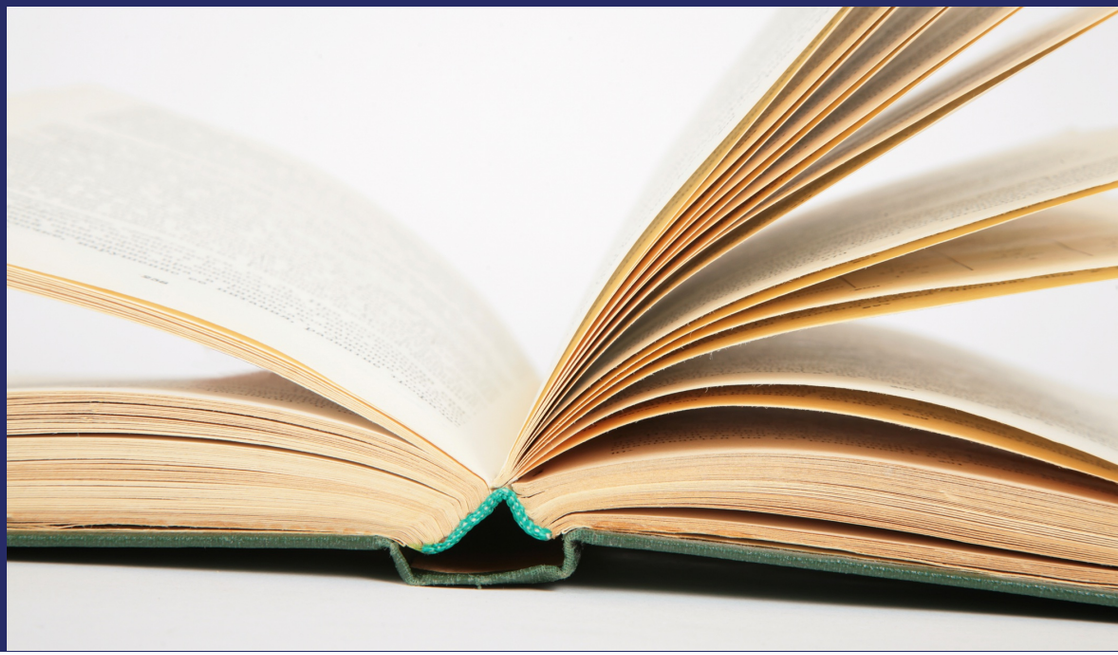
Statistics, multivariate data analysis and convex optimization are applied widely in many scientific domains and most analytical techniques are developed based on matrix analysis and matrix calculus because matrix is abstract representation of multivariate data. Although it is slightly confused for us to comprehend their concepts and theories, matrix analysis and calculus give us exciting results which enhance data analysis techniques to be more plentiful and accurate. So the report is survey of matrix analysis and calculus, which includes five main sections such as basic concepts, matrix analysis, matrix derivative, composite derivative, and applications of matrix. Matrix derivative and composite derivative are subjects of matrix calculus.



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Matrix Analysis and Calculus

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