NONLINEAR OPERATOR THEORY AND FIXED-POINT ITERATIONS

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ABSTRACT

While the study of linear operators has a long and extensive history, nonlinear operators have received significantly less attention. In this talk, we discuss the one-to-one correspondence between nonexpansive operators and nonlinear monotone operators. This correspondence relates the theory of nonlinear operators to the wide range of algorithms in applied mathematics and machine learning expressed as nonexpansive fixed-point iterations. We then discuss recent advances in the tools for analyzing nonlinear operators and their applications in machine learning. This talk is based on the upcoming book [1].

REFERENCES