

THE ARROW-HURWICZ-UZAWA METHOD: HISTORICAL PERSPECTIVES AND CURRENT ADVANCES

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This talk explores the Arrow-Hurwicz-Uzawa method, tracing its development from early applications in partial differential equations (PDEs) to modern advancements in optimization, image processing, and scientific computing. We will examine recent refinements for developing GPU-adaptive solvers for huge-scale linear programming and its extension to semidefinite programming arising in quantum information science. The discussion will also highlight the method's integration with deep learning and unrolling techniques for optimal control problems of PDEs, as well as its applications in industry.