## AN OPTIMIZATION PROBLEM RELATED TO GENERALIZED EQUILIBRIUM AND FIXED POINT PROBLEMS WITH APPLICATIONS

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Dedicated to Wataru Takahashi on the occasion of his retirement

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**Abstract.** We introduce a method for finding a solution of an optimization problem to the set of common solutions of generalized equilibrium problems and the set of common fixed points of a family of infinite nonexpansive mappings. The results presented in this paper improve and extend the corresponding results of many others.

**Key Words and Phrases**: Optimization problem, generalized equilibrium problem, fixed point problem, convex feasibility problem, nonexpansive mapping, W-mapping. **2010 Mathematics Subject Classification**: 47O5, 47J25, 47H10, 47N10.

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