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MASTER'S THESIS PRESENTATION

A Bayesian Method for Automated Golf Course Difficulty Rating

WHEN
February, 11, 2022
10:00 AM, CST

WHERE
Jones Laboratory, Room 304

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The United States Golf Association (USGA) uses a computer system known as the \textit{Golf Handicap Information Network} (GHIN) to assign normalized ability scores to individual golfers. This system works by using a pair of relative difficulty ratings assigned to a golf course to map golfers' scores at that course into a normalized space. The difficulty ratings associated with a course are infrequently assigned by an arbitrary process, and are not evaluated for accuracy. In this paper I define a method for representing golfers using the normalized space constructed by the handicapping system, and use this representation to build a Bayesian strategy for optimizing course difficulty ratings based on data submitted to the GHIN. I empirically study the properties of this strategy using simulated GHIN data, and show that the procedure is able to iteratively correct errant course ratings under the assumption of an unbiased USGA rating process. I then apply the updating strategy to data collected by the GHIN from a set of Massachusetts golf clubs, and find evidence that multiple sets of assigned course ratings are inaccurate.

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