Reinforcement Learning and Utility-Based Decisions

Michael Littman Department of Computer Science Rutgers University Piscataway, NJ, 08854-8019 littman@cs.rutgers.edu

ABSTRACT

In one model of utility-based data mining (UBDM), the primary concerns are the cost of acquiring data, the computational costs of mining the data, and the benefit of using the mined knowledge. Finding a truly optimal strategy over all these sources of utility is intractable. I will describe some recent trends in the reinforcement learning literature that deal with a set of analogous problems from a PAC perspective and I will attempt to connect these ideas back to the UBDM setting.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

UBDM 06, August 20, 2006, Philadelphia, Pennsylvania, USA. Copyright 2006 ACM 1-59593-440-5/06/0008...\$5.00.