

# Experience with Rule Induction & k-Nearest Neighbour Methods for Interface Agents that Learn

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**Abstract** - Interface Agents are being developed to assist users with various tasks. To perform effectively, the agent needs knowledge of user preferences. An agent architecture has been developed which observes a user performing tasks, and identifies features which can be used as training data by a learning algorithm. Using the learned profile, the agent can give advice to the user on dealing with new situations. The architecture has been applied to two different information filtering domains: classifying incoming mail messages (Magi) and identifying interesting USENET news articles (UNA). This paper describes the architecture and examines the results of experimentation with different learning algorithms and different feature extraction strategies within these domains.

**Index Terms** - Machine Learning, interface agent, information filtering, intelligent USENET news reader, intelligent email filter, agent architecture, instance-based learning, rule induction.