Just handling the data right, with validation and true out-of-sample data set aside, can be a critical contribution. But it’s also the trained analytic mind, seeing the client’s problem for the first time, that provides a valuable outside perspective. Often, a group has been addressing a problem in just one way for so long that the group members act as if it’s the only way, and an outsider committed to understanding the details of their challenge can make great contributions just by asking intelligent, probing questions.

To increase your effectiveness, seek training. There are excellent short courses on data mining, which are quicker for many to digest than books. Also look for opportunities to give presentations. If you are not one of those for whom public speaking is terrifying, count yourself lucky; it can be a distinguishing skill. Conferences are very eager for industrial contributions; they are dominated by academics, due to the score function for academics that requires the writing of papers and self-promotion. It is hard to attract industrial practitioners, who often have to write papers on their own time, and whose management is rightly fearful that industrial trade secrets will be revealed. (And it is astonishing to newcomers how slight a deviation from standard practice is jealously guarded as a valuable intellectual property.) But, when a good industrial paper is delivered at a conference, it is eagerly listened to and appreciated. The real world has distinct advantages over toy problems in imparting useful lessons. So learn to present and speak; this skill is rare and thus valuable. Conveying the value of data mining to management will ensure the needed backing for your analytics. Again, it is only by helping others succeed at their goals that we get the chance to succeed at ours.

Three Goals

To conclude, we want to share three goals that will contribute to your data mining successes:

1. Maintain a diversity of projects. Whether a project is military, medical, or monetary, it hinges on whether you and the client can successfully learn useful patterns from historical data. A mix of applications will expose you to the collected wisdom of expert practitioners in each domain, teaching you much. For instance, a data feature similar to one useful in drug efficacy studies has, for one team, contributed to fraud risk estimation, and techniques originally applied to high-performance aircraft have improved investment and credit projects.

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11 It is said that a majority of Americans rank their fear of public speaking above even their fear of death! Perhaps this is due to it being much easier to imagine yourself speaking than dying. Nevertheless, the willingness and ability to speak well is worth cultivating; it is valued due to its scarcity.

12 We have found Toastmasters to be a useful way for those without practice or comfort speaking in public to become aware of the components of different kinds of useful talks—from jokes and introductions, to technical talks and “elevator speeches” (30-second summaries of what you’re working on in case the big boss asks you in an elevator)—and gain practice and advice on how to improve their presentation skills.