

Acknowledgments

The author is sincerely grateful to Professor Shigeru Igarashi, the thesis advisor, for providing continuous and essential support which make the thesis possible. He also appreciates suggestions and guidance provided by the other committee members, Professor Masahiko Sato, Professor Tetsuo Ida, Professor Jiro Tanaka and Professor Chiharu Hosono.

The author would like to acknowledge Professor Tetsuya Mizutani and Dr. Masayuki Shio for their kindest support.

The author thanks people who maintain UCI machine learning repository, Dr. William H. Wolberg who prepared the breast cancer database[44], and Dr. Robert Detrano who prepared the heart disease database, for making his experiments on EBFS possible.

The author is grateful to Hironobu Aoyama, Seiichiro Kanno and Yuho Mohri, who provided indispensable data for *Chie-no-Izumi* and helped author carry out his experiments on *Chie-no-Izumi*.

The author is very thankful to Jun Arima, who suggested to refer the work related to circumscription at the discussion on [50], and to Ken Satoh and Noboru Iwayama, who discussed the treatment of negations with him.

The author is also thankful to Professor Bipin Indurkha for his encouragement to continue to study partitioning. He also owes Professor Makoto Haraguchi thank for introducing him to Professor Indurkha and his works.

The author also wish to thank his colleagues in Toshiba Corporation, especially Toshikazu Tanaka, Akihiko Ohsuga, Kazue Nagao, Dai Araki, Kazuki Yoshida, Hiroshi Konno, Shigeru Matsumoto and Dominic Beaudoin, for many useful discussions.

The author is also thankful to Professor I. Burhan Türkşen, for continuous support during his stay at University of Toronto.

The author is also grateful to Seiichi Nishijima, Sadakazu Watanabe, Mutsuhiro Arinobu, Hideki Hirakawa, Ikumune Takahashi, Shinsuke Tamura, Masahiko Arai and Naomichi Sueda of Toshiba Corporation, who provided essential support.

Finally, the author would like to appreciate his wife, Naoko, for her con-

tinuous encouragement.