Acknowledgements

Vanessa and I would like to thank our series editor Simon Haykin for encouraging us to write a text on modern complex valued adaptive signal processing. In addition, my own work in this area was inspired by the success of my earlier monograph “Recurrent Neural Networks for Prediction”, Wiley 2001, co-authored with Jonathon Chambers, where some earlier results were outlined. Over the last seven years these ideas have matured greatly, through working with my co-author Vanessa Su Lee Goh and a number of graduate students, to a point where it was possible to write this book. I have had great pleasure to work with Temujin Gautama, Maciej Pedzisz, Mo Chen, David Looney, Phebe Vayanos, Beth Jelfs, Clive Cheong Took, Yili Xia, Andrew Hanna, Christos Boukis, George Souretis, Naveed Ur Rehman, Tomasz Rutkowski, Toshihisa Tanaka, and Soroush Javidi (who has also designed the book cover), who have all been involved in the research that led to this book. Their dedication and excitement have helped to make this journey through the largely unchartered territory of modern complex valued signal processing so much more rewarding.

Peter Schreier has provided deep and insightful feedback on several chapters, especially when it comes to dealing with complex noncircularity. We have enjoyed the interaction with Tülay Adalı, who also proofread several key chapters. Ideas on the duality between real and complex filters matured through discussions with Susanna Still and Jacob Benesty. The collaboration with Scott Douglas influenced convergence proofs in Chapter 6. The results in Chapter 18 arose from collaboration with Marc Van Hulle and his team. Tony Constantinides, Igor Aizenberg, Aurelio Uncini, Tony Kuh, Preben Kidmose, Maria Petrou, Isao Yamada, and Olga Boric Lubecke provided valuable comments.

Additionally, I would like to thank Andrzej Cichocki for invigorating discussions and the timely reminder that the quantum developments of science are in the hands of young researchers. Consequently, we decided to hurry up with this book while I can still (just) qualify. The collaboration with Kazuyuki Aihara and Yoshito Hirata helped us to hone our ideas related to complex valued wind forecasting.

It is not possible to mention all the colleagues and friends who have helped towards this book. Members of the IEEE Signal Processing Society Technical Committee on Machine Learning for Signal Processing have provided support and stimulating discussions, in particular, David Miller, Dragan Obradovic, Jose Principe, and Jan Larsen. We wish to express our appreciation to the signal processing tradition and vibrant research atmosphere at Imperial College London, which have made delving into this area so rewarding.
We are deeply indebted to Henry Goldstein, who tamed our immense enthusiasm for the subject and focused it to the needs of our readers.

Finally, our love and gratitude goes to our families and friends for supporting us since the summer of 2006, when this work began.

Danilo P. Mandic
Vanessa Su Lee Goh