Preface to the Revised Second Edition

This revised second edition of *Computational Fluid Dynamics* represents a significant improvement from the first edition. However, the original idea of including all computational fluid dynamics methods (FDM, FEM, FVM); all mesh generation schemes; and physical applications to turbulence, combustion, acoustics, radiative heat transfer, multiphase flow, electromagnetic flow, and general relativity is maintained. This unique approach sets this book apart from its competitors and allows the instructor to adopt this book as a text and choose only those subject areas of his or her interest.

The second edition includes new sections on finite element EBE-GMRES and a complete revision of the section on the flowfield-dependent variation (FDV) method, which demonstrates more detailed computational processes and includes additional example problems. For those instructors desiring a textbook that contains homework assignments, a variety of problems for FDM, FEM, and FVM are included in an appendix. To facilitate students and practitioners intending to develop a large-scale computer code, an example of FORTRAN code capable of solving compressible, incompressible, viscous, inviscid, 1-D, 2-D, and 3-D for all speed regimes using the flowfield-dependent variation method is available at http://www.uah.edu/cfd.