# Table of Contents

1996 Australian Software Engineering Conference

| Foreword | viii |
| Committees | ix |

## Session 1: Keynote Address I
Verification, Validation and the Future of Software Engineering ........................................ 2
   John Staples, University of Queensland

## Session 2: Formal Methods
An Algebraic Semantics for Object-Oriented Behavior Modeling ........................................ 4
   J.W.G.M. Hubbers and A.H.M. ter Hofstede

A Tool for Practical Reasoning about State Machine Designs ........................................... 16
   A. Cant, K.A. Eastaughffe, and M.A. Ozols

An Industrial-Strength Method for the Construction of Formally Verified Software ............. 27
   P. Lindsay and D. Hemer

## Session 3: Programming/Tools
Automatic Analysis of Functional Program Style .......................................................... 38
   G. Michaelson

Software Visualization in a Generic Development Environment ........................................ 47
   W. Allison, D. Carrington, T. Jones, L. Stewart-Zerba, G. Watson, and J. Welsh

A Layered Operational Model for Describing Inter-tool Communication in Tool Integration Frameworks .............................................................. 55
   J.G. Harvey and C.D. Marlin

## Session 4: Panel — Do Formal Methods Really Work?
Do Formal Methods Really Work? ................................................................................... 66
   Chair: Lin Zucconi, CSIRO
   Panelists: Greg Royle, CSC Australia
            Karl Reed, La Trobe University
            John Staples, University of Queensland

## Session 5: Object-Orientation
Teaching Object Orientation: Patterns and Reuse ......................................................... 72
   N.A.B. Gray

Towards Analyzing a Class of Object Petri Nets ............................................................ 81
   S. Ling and H.W. Schmidt
Classification-Hierarchy Table: A Methodology for Constructing the Classification Tree.......................................................................................... 93
T.Y. Chen and P.L. Poon

Session 6: Panel — Does Object-Orientation Really Work?
Does OO Work?........................................................................................................................... 106
Chair:  Brian Henderson-Sellers, Swinburne University of Technology
Panelists: N.A.B. Gray, University of Wollongong
C. Mingins, Monash University
L. Zhao, Royal Melbourne Institute of Technology

Session 7: Education
Enhancing Project-Based Learning: Variations on Mentoring.................................................. 112
P. Dart, L. Johnston, and C. Schmidt
An Application of Quantitative Techniques to the Question of What Contributes to a Successful Software Development Project.................................................. 118
K. Mullin and S. Hope
Analysis of Software System Requirements Models .................................................................. 131
E. Haywood and P. Dart

Session 8: Keynote Address II
Industry — University Partnerships: The Wave of the Future? ............................................. 140
Nancy R. Mead, Carnegie Mellon University

Session 9: Keynote Address III
A System for Evaluating the Congruence of Software Process Models .................................. 144
Nazim H. Madhavji, McGill University

Session 10: Maintenance
An Integrated Database Reengineering Architecture — A Generic Approach.......................... 146
W.M. Lim and J. Harrison
The Hierarchical Dependence Diagram: Improving Design for Reuse in Object-Oriented Software Development .......................................................... 155
J. Chen and I.T. Chau
More on the E-Measure of Subdomain Testing Strategies ..................................................... 167
T.Y. Chen and Y.T. Yu

Session 11: Architecture/Process
Distributing the Software Process.............................................................................................. 176
I.T. Hawryszkiewycz and I. Gorton
Consistency Issues in Partially Bound Dynamically Composed Systems ................................................................................................................... 183
  B. Schmerl and C. Marlin

An Initial Comparison of Software and Engineering Designs of Automotive Cruise Control Systems ........................................................................................................... 192
  J. Baragry

Comparing Inspection Strategies for Software Requirement Specifications .............................................................................................................................. 203
  B. Cheng and R. Jeffery

Author Index ................................................................................................................................................................................. 212