

**Proceedings of the
Sixth International Conference on
the Application of Artificial Intelligence
to Civil and Structural Engineering**

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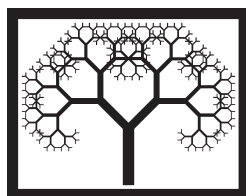
B. Kumar and B. Raphael

Neural Computing for Structural Mechanics

B.H.V. Topping and A. Bahreininejad

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Contents

Preface	v
I Computer Aided Design in Civil and Structural Engineering	1
1 The Integration of Computer Aided Design and Analysis Tools using a Logic-Based Approach D. Jonson, J. de Beer and N. Daya	3
2 An Integrated Tool for Structural Design within an Interactive Virtual Environment R.A. Smith, W.M.K. Tizani and D.A. Nethercot	5
3 Search-Control Knowledge for the Interoperability Problem between Conceptual and Preliminary Structural Design M. Eisfeld and R.J. Scherer	7
4 A Cognitive Complexity Measure for the Design Process S. Sinha, A.I. Thomson and B. Kumar	9
II Artificial Intelligence Approaches to Construction Engineering	11
5 A Framework for Analogy Based Estimation in Building Services K. Rintala, B. Kumar and I. MacLeod	13
6 Using Fuzzy Set Theory (FST) in Selecting a Suitable Foundation Type H.K. Amin, K.M. El Zahaby, M.A. Taha and A.S. Bazaraa	15
7 Implementation of a Web-Based Collaborative Decision-Making System using Fuzzy Logic H.M. Yang, C.J. Anumba and P.M. Carrillo	17
8 Viewing Construction Scheduling as a Constraint Satisfaction Problem P. Lorterapong and T. Rattanadamrongagsorn	19
9 A Multidisciplinary Collaborative Design System for Civil Engineering Projects M. Sun, G. Aouad and N. Bakis	21

III	Knowledge Based Systems in Civil and Structural Engineering	23
10	An Expert System for Foundation Design of Buildings: Case Demonstration of a GCPM-Integrated Prototype System J.F. van den Adel, S.H. Al-Jibouri, U.F.A. Karim and M. Mawdesley	25
11	Concrete Bridge Rating Expert System with Neuro-Fuzzy Hybrid System and its Application K. Kawamura and A. Miyamoto	27
12	Knowledge-Based System Associated with Foundations in Expansive Soils M.E.M. Hamadto and J. Oliphant	29
IV	Neural Networks in Structural Engineering	31
13	SCNN Solver for Finite Element Analysis with Neural Network Elements S. Li	33
14	A Unified Neural Network Approach for Steel Beams Patch Load Capacity E.T. Fonseca, M.M.B.R. Vellasco, S.A.L. de Andrade and P.C.G. daS. Vellasco	35
15	Diagnosis of Damage in RC Structures Based on Structural Static Response with the ANN Technique C.H. Tsai and D.S. Hsu	37
16	Structural Health Monitoring of Offshore Structures S.A. Mourad, A.W. Sadek and A.F. Batisha	39
17	Neural Identification for Critical Flutter Load of a Polar-Orthotropic Annular Plate I. Takahashi	41
18	Using Neural Networks to Design Cold-Formed Steel Sections R.I. Mackie, E.M.A. El-Kassas and A.I. El-Sheikh	43
19	ANN Modelling of the Dynamic Non-linear Behaviour of Concrete Towers subjected to Base Excitation M.Tehranizadeh and M. Safi	45
20	Neural Networks Forecasting of Endplate Steel Connections Capacity L.R.O. de Lima, P.C.G. da S. Vellasco, S.A.L. de Andrade, and M.M.B.R. Vellasco	47
V	Neural Networks in Civil Engineering	49
21	Preliminary Quantity Estimate of Highway Bridges using Neural Networks G. Morcou, M.M. Bakhom, M.A. Taha and M. El-Said	51

22	Prediction of Workability of Concrete incorporating Metakaolin and PFA using Neural Networks	53
	J. Bai, S. Wild, A. Ware, B.B. Sabir	
23	Basic Study for Local Short-Range Weather Forecast System with GPS	55
	S. Tanaka, H. Furuta, M. Hirokane, T. Takada, T. Sada and K. Uchino	
24	Application of Artificial Neural Networks to Tidal Forecasting	57
	D.S. Jeng, T.L. Lee and K.J. Hsu	
25	Pollution Modelling for Hong Kong Downtown Area Using Principal Component Analysis and Artificial Neural Networks	59
	W.Z. Lu, H.Y. Fan, W.J. Wang, S.M. Lo, A.Y.T. Leung and J.C.K. Wong	
26	Developments in the Use of Neural Nets for Truck Weigh-in-Motion on Steel Bridges	61
	I. Flood, R.R.A. Issa and N. Kartam	
27	A Neural Network to Estimate Concrete Strength Based on Non-Destructive Test Results	63
	S.A. Mourad, A.W. Sadek, and A.A. El-Fayoumy	
28	Development of a Neural Network to Predict Residential Energy Consumption	65
	R.R.A. Issa, I. Flood and M. Asmus	
29	Stochastic and Neural Techniques for On-line Wave Prediction	67
	J.D. Agrawal and M.C. Deo	
VI	Neural Networks in Geotechnical Engineering	69
30	Using BPNNs in selecting a Suitable Type of Foundation	71
	H.K. Amin, K.M. El Zahaby, M.A. Taha and A.S. Bazaraa	
31	Determining the Importance of Factors affecting a Ground-Foundation System using Artificial Neural Network and Systems Methodologies	73
	P. Lu and M. Rosenbaum	
32	Interpretation of Dynamic Pile Load Tests Using Neural Networks	75
	A.S. Dyminski, C. Romanel and E. Parente Ribeiro	
33	Prediction of Collapse Potential via Artificial Neural Networks	77
	G. Habibagahi and M. Taherian	
34	Non-destructive Testing of Ground Anchorages Using the GRANIT® Technique	79
	A. Starkey, A. Ivanovic, R.D. Neilson and A.A. Rodger	
35	Analysis of Bearing Features of Rock-Socketed Piles Using Neural Networks	81
	Y. Huang, W.M. Ye and Y.Q. Tang	

VII	Evolutionary Computing in Civil and Structural Engineering	83
36	Genetic Algorithm Trained Counter-Propagation Neural Net in Structural Optimization A. Iranmanesh and M. Fahimi	85
37	A Competitive Comparison of Different Types of Evolutionary Algorithms O. Hrstka and A. Kučerová and M. Lepš and J. Zeman	87
38	Genetic Algorithms in a Competitive Environment with Application to Reliability Optimal Design C. Dimou and V. Koumousis	89
	Author Index	91
	Keyword Index	93

Preface

This volume comprises the extended abstracts of contributed papers presented at The Sixth International Conference on the Application of Artificial Intelligence to Civil and Structural Engineering (AICivil-Comp 2001). The full papers from the conference are available on the accompanying CD-ROM. The conference was held concurrently with The Eighth International Conference on Civil and Structural Engineering Computing (Civil-Comp 2001) in Eisenstadt, Austria, from 19 to 21 September 2001. These conferences are part of the Civil-Comp series that commenced in 1983.

The topics covered in these Proceedings are wide ranging and demonstrate the extensive use of artificial intelligence in civil and structural engineering. They have been classified as:

- Computer Aided Design
- Artificial Intelligence Approaches to Construction Engineering
- Knowledge Based Systems in Civil and Structural Engineering
- Neural Networks in Civil, Structural and Geotechnical Engineering
- Evolutionary Computing in Civil and Structural Engineering

We should like to thank all the authors and co-authors of the papers included in this volume of proceedings. We are especially grateful to those who took the time and made the effort to participate in Eisenstadt.

Finally, we should like to thank the members of the Conference Editorial Board for their help before and during the conference: Professor M. Alshawi, United Kingdom; Professor T. Andersen, Denmark; Dr C.J. Anumba, United Kingdom; Professor G. Aouad, United Kingdom; Professor T. Arciszewski, United States of America; Professor J. Bento, Portugal; Professor M. Betts, United Kingdom; Professor F. Casciati, Italy; Professor W. T. Chan, Malaysia; Dr I.E.G. Davey-Wilson, United Kingdom; Dr W.P.S. Dias, United States of America; Professor I. Flood, United States of America; Professor J. Garrett, United States of America; Professor J.S. Gero, Australia; Professor A. Goh, Singapore; Professor D.S. Hsu, Taiwan; Professor B. Knight, United Kingdom; Professor C.S. Krishnamoorthy, India; Dr M.J. Mawdesley, United Kingdom; Dr T.J. McCarthy, United Kingdom; Dr I.C. Parmee, United Kingdom; Dr M.Y. Rafiq, United Kingdom; Dr S. Rowlinson, Hong Kong; Professor R.J. Scherer, Germany; Professor M.J. Skibniewski, United States of America; Dr W. Tizani, United Kingdom; and Professor I. Tommelein, United States of America.

Other papers presented at the conferences in 2001 have been published as follows:

- *The Contributed Papers from Civil-Comp 2001 are published in: Proceedings of the Eighth International Conference on Civil and Structural Engineering Computing*, B.H.V. Topping (Editor), (Book of Abstracts and CD-ROM), Civil-Comp Press, Stirling, Scotland, 2001.
- *The Special Lectures from Civil-Comp 2001 and AICivil-Comp 2001 are published in: Civil and Structural Engineering Computing: 2001*, B.H.V. Topping (Editor), Saxe-Coburg Publications, Stirling, Scotland, 2001.

These Conferences could not have been organised without the contribution of many who helped in their planning, organisation and execution. We should like to thank Professor David Toll who helped in formulation of the conference themes. We are grateful to Dr Martin Sales who suggested Eisenstadt as the venue for these conferences. Thanks are also due to all at Saxe-Coburg Publications: Civil-Comp Ltd for their help and perseverance in the realisation of these conferences, particularly Evelyn Armit and Rosemary Brodie. The development of the new format and design of the Civil-Comp Conference Proceedings for 2001, including the CD-ROMs, required a major effort by Civil-Comp Ltd. This is the first major re-design and re-formatting of the Civil-Comp Conference Proceedings in over ten years and it has been undertaken and coordinated by Jelle Muylle. His skill, support and dedication during this radical change is greatly appreciated. The assistance of members of the Structural Engineering Computational Technology Research Group at Heriot-Watt University, Edinburgh is gratefully acknowledged especially from Roman Putanowicz, Péter Iványi and János Néző.

Barry H.V. Topping and Bimal Kumar