

Contents

Preface / ix

John Laird, Ian Davis, Michael van Lent, and R. Michael Young

Organizing Committee / xi

Program Committee / xiii

Sponsors / xv

Full Papers

Applying Constraint Weighting to Autonomous Camera Control / 3

Owen Bourne and Abdul Sattar

Quagents: A Game Platform for Intelligent Agents / 9

Christopher Brown, George Ferguson, Peter Barnum, Bo Hu, and Dave Costello

Natural Noun Phrase Variation for Interactive Characters / 15

Donna K. Byron, Aakash Dalwani, Ryan Gerritsen, Mark Keck, Thomas Mampilly, Vinay Sharma, Laura Stoia, Timothy Weale, and Tianfang Xu

Dialogue Generation in Character-based Interactive Storytelling / 21

Marc Cavazza and Fred Charles

Towards Learned Anticipation in Complex Stochastic Environments / 27

Christian J. Darken

A Goal-Based Architecture for Opposing Player AI / 33

Kevin Dill and Denis Papp

Retaining Learned Behavior During Real-Time Neuroevolution / 39

Thomas D'Silva, Roy Janik, Michael Chrien, Kenneth O. Stanley and Risto Miikkulainen

nuWar: A Prototype Sketch-based Strategy Game / 45

Greg Dunham, Ken Forbus, and Jeffrey Usher

Sequence Learning by Backward Chaining in Synthetic Characters / 51

Peter Gorniak and Bruce Blumberg

Speaking with your Sidekick: Understanding Situated Speech in
Computer Role Playing Games / 57

Peter Gorniak and Deb Roy

Hierarchical Plan Representations for Encoding Strategic Game AI / 63

Hai Hoang, Stephen Lee-Urban, and Héctor Muñoz-Avila

Scalable Solutions for Interactive Virtual Humans that Can Manipulate Objects / 69

Marcelo Kallmann

- Particle-Based Communication Among Game Agents / 75
Mike Klaas, Tristram Southey, and Warren Cheung
- Unscripted Narrative for Affectively Driven Characters / 81
Sandy Louchart, Ruth Aylett, Joao Dias, and Ana Paiva
- Story Representation and Interactive Drama / 87
Brian Magerko
- Structuring Content in the *Façade* Interactive Drama Architecture / 93
Michael Mateas and Andrew Stern
- Search-Based Drama Management in the Interactive Fiction *Anchorhead* / 99
Mark J. Nelson and Michael Mateas
- Agent Architecture Considerations for Real-Time Planning in Games / 105
Jeff Orkin
- From Linear Story Generation to Branching Story Graphs / 111
Mark O. Riedl and R. Michael Young
- Cooperative Pathfinding / 117
David Silver
- Semi-Automated Gameplay Analysis by Machine Learning / 123
Finnegan Southey, Gang Xiao, Robert C. Holte, Mark Trommelen, and John Buchanan
- Negative Behavior Space in the Design of Interactive Agents / 129
Bill Tomlinson
- Increasing Replayability with Deliberative and Reactive Planning / 135
Michael van Lent, Mark O. Riedl, Paul Carpenter, Ryan McAlinden, and Paul Brobst
- Hierarchical Parallel Markov Models of Interaction / 141
Robert Zubek and Ian D. Horswill

Demo Papers

- Real-time Simulation of Herds Moving Over Terrain / 149
Joel Gompert
- Controlling Unreal Tournament 2004 Bots with the Logic-based Action Language GOLOG / 151
Stefan Jacobs, Alexander Ferrein, and Gerhard Lakemeyer
- The Interactive Drama *Façade* / 153
Michael Mateas and Andrew Stern
- Adding Smart Opponents to a First-Person Shooter Video Game
 through Evolutionary Design / 155
C. Adam Overholtzer and Simon D. Levy
- The Trial The Trail, Act 3: A Virtual Reality Drama Using Intelligent Agents / 157
*Stuart C. Shapiro, Josephine Anstey, David E. Pape, Trupti Devdas Nayak, Michael Kandefer,
 and Orkan Telhan*
- Real-time Learning in the NERO Video Game / 159
Kenneth O. Stanley, Ryan Cornelius, and Risto Miikkulainen

Invited Talk

Interactive Story Writing Using ScriptEase / 163

Jonathan Schaeffer, Mike Carbonarro, Maria Cutumisu, Matthew McNaughton, Curtis Onuczko, Thomas Roy, and Duane Szafron

Index / 165