Contents

AIIDE-10 Organization / ix
Sponsors / xii
Preface / xiii
Starcraft Competition / xv
Invited Talks / xvii

Industry Track

AI for Herding Sheep / 2
  Peter Cowling, Christian Gmeinwieser

Research Track

Realistic Fireteam Movement in Urban Environments / 9
  Christian J. Darken, Daniel McCue, Michael Guerrero

An Automated Technique for Drafting Territories in the Board Game Risk / 15
  Richard Gibson, Neelsha Desai, Richard Zhao

Training Goal Recognition Online from Low-Level Inputs in an Action-Adventure Game / 21
  Kevin Gold

Using Machine Translation to Convert between Difficulties in Rhythm Games / 27
  Kevin Gold, Alexandra Olivier

Breaking Path Symmetries on 4-Connected Grid Maps / 33
  Daniel Harabor, Adi Botea

DHPA* and SHPA*: Efficient Hierarchical Pathfinding on Dynamic and Static Game Worlds / 39
  Alex Kring, Alex J. Champandard, Nick Samarin

An Offline Planning Approach to Game Plotline Adaptation / 45
  Boyang Li, Mark O. Riedl

Story and Text Generation through Computational Analogy in the Riu System / 51
  Santiago Ontaño, Jichen Zhu

Modeling User Knowledge with Dynamic Bayesian Networks in Interactive Narrative Environments / 57
  Jonathan P. Rowe, James C. Lester
Towards Automatic Personalized Content Generation for Platform Games / 63
Noor Shaker, Georgios Varnakakis, Julian Togelius

Learning Companion Behaviors Using Reinforcement Learning in Games / 69
AmirAli Sharifi, Richard Zhao, Duane Szafron

A Comparison of High-Level Approaches for Speeding Up Pathfinding / 76
Nathan R. Sturtevant, Robert Geisberger

Perceptually Realistic Behavior through Alibi Generation / 83
Ben Sunshine-Hill, Norman I. Badler

Crowd Simulation Via Multi-Agent Reinforcement Learning / 89
Lisa Torrey

A Semantic Scene Description Language for Procedural Layout Solving Problems / 95
Tim Tutenel, Ruben M. Smelik, Rafael Bidarra, Klaas Jan de Kraker

Applying Goal-Driven Autonomy to StarCraft / 101
Ben G. Weber, Michael Mateas, Arnav Jhala

Industry Track Poster
Designing a Massively Multiplayer Online Game / Research Testbed Featuring AI-Driven NPC Communities / 108
Michael Zyda, Marc Spraragen, Balakrishnan Ranganathan, Bjarni Arnason, Peter Landwehr

Research Track Posters
On the Complexity of Two-Player Attrition Games Played on Graphs / 113
Timothy Furtak, Michael Buro

Adversarial Navigation Mesh Alteration / 120
D. Hunter Hale, G. Michael Youngblood

A Non-Modal Approach to Integrating Dialogue and Action / 126
Philip Hanson, Charles Rich

Multi-Agent Coordination Using Dynamic Behavior-Based Subsumption / 132
Frederick W. P. Heckel, G. Michael Youngblood

Polymorph: A Model for Dynamic Level Generation / 138
Martin Jennings-Teats, Gillian Smith, Noah Wardrip-Fruin

A Command Language for Taskable Virtual Agents / 144
Pat Langley, Nishant Trivedi, Matt Banister

A Monte Carlo Approach for Football Play Generation / 150
Kennard Laviers, Gita Sukthankar

Fuzzy Micro-Agents for Interactive Narrative / 156
Brian Magerko, Casey Fiedler, Allan Baumer
Behavior Compilation for AI in Games / 162
  Jeff Orkin, Tynan Smith, Deb Roy

Terrain Analysis in Real-Time Strategy Games: An Integrated Approach to
Choke Point Detection and Region Decomposition / 168
  Luke Perkins

Novice-Friendly Authoring of Plan-Based Interactive Storyboards / 174
  James Skorupski, Michael Mateas

Player Modeling in Civilization IV / 180
  Pieter Spronck, Freek den Teuling

An Automated Model-Based Adaptive Architecture in Modern Games / 186
  Chek Tien Tan, Ho-lun Cheng

Minstrel Remixed: Procedurally Generating Stories / 192
  Brandon Tearce, Noah Wardrip-Fruin, Michael Mateas

Socially Consistent Characters in Player-Specific Stories / 198
  David Thue, Vadim Bulitko, Marcia Spech, Michael Webb

Quest Patterns for Story-Based Computer Games / 204
  Marcus Trenton, Duane Szafron, Joshua Friesen, Curtis Onuczko

Modeling Narrative Conflict to Generate Interesting Stories / 210
  Stephen G. Wars, R. Michael Young

Demonstration Abstracts

WeQuest: A Mobile Alternate Reality Gaming Platform and Intelligent End-User Authoring Tool / 217
  Chinmay Barve, Sanjeet Hajarnis, Devika Karnik, Mark O. Riedl

The Pataphysic Institute / 219
  Mirjam P. Eladhari

The Prom: An Example of Socially-Oriented Gameplay / 221
  Josh McCoy, Mike Treanor, Ben Samuel, Brandon Tearce, Michael Mateas, Noah Wardrip-Fruin

Tanagra: An Intelligent Level Design Assistant for 2D Platformers / 223
  Gillian Smith, Jim Whitehead, Michael Mateas

Rapid Development of Characters in FPS/3PS Games Using Visually-Specified Behavior-Based Control / 225
  G. Michael Youngblood, Frederick W. P. Heeke, D. Hunter Hale, Arthur Carroll

Index / 227