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Backgrounder: AIIDE 07 Invited Speakers

AiLive's *LiveMove* and *LiveCombat*
Wolff Daniel Dobson and John Funge (AiLive Inc.)

This talk describes the successfully productization of the state-of-the-art statistical machine learning technology to create *LiveMove* and *LiveCombat*. *LiveMove* is a groundbreaking artificial intelligence product that enables the Wii Remote to learn. Instead of complicated programming, developers need only take a few minutes to train Wii controllers through examples. Nintendo now sublicenses and promotes *LiveMove* to Wii developers around the world. Our other product, *LiveCombat*, gives developers and players the power to build AI characters that learn how to behave by observing the actions of human players. AI characters learn in seconds to be trusted companions or deadly foes. The talk will include many anecdotes and observations from lessons learned (often the hard way) along the way.

Wolff Daniel Dobson received his PhD in computer science from Northwestern University, specializing in artificial intelligence and intelligent user interfaces. At Visual Concepts Entertainment, he constructed emotional behavior on *NBA2K* for Dreamcast, and then became colead for artificial intelligence on *NBA2K1* (garnering a Metacritic.com score of 93). For the past 5 years he has worked for AiLive Inc., a startup devoted to next-generation artificial intelligence in games. Working as a designer, producer, engineer, and artist Wolff has been instrumental in developing two commercial products, *LiveMove* and *LiveCombat*, that bring groundbreaking real-time machine learning technology to the computer entertainment industry.

John Funge is a cofounder and one of the lead scientists at AiLive Inc. At AiLive he helped develop *LiveMove* and *LiveCombat*, two commercial products that bring ground breaking real-time machine learning technology to the computer entertainment industry. Funge previously worked at Sony Computer Entertainment America's research lab. He received his PhD in computer science from the University of Toronto and also holds degrees from Oxford University and King's College London. Funge is the author of numerous technical papers and two books on Game AI, including his latest book *Artificial Intelligence for Computer Games: An Introduction.*

Streaming, Open-World Pathfinding
Quinn Dunki (Midway Games)

Open-world, streaming environments are common in next generation games, but pose significant challenges for pathfinding. This talk describes current work in accurate pathfinding for hundreds of agents in a very large, highly dynamic environment, which is subject to the chaos of multi- threaded streaming and physics; and details the

approach on a particular project at Pandemic Studios.

Quinn Dunki is an AI programmer at Pandemic Studios. She was born and raised in Canada, but has been living and working in California for the past 8 years. She has been making games for a little over 20 years, the last 11 of which have been professional. In her spare time, she races cars, writes, and travels as much as she can. She also looks forward to belittling her coworkers with sarcasm each and every day.

Invited Talk by Chris Hecker
Chris Hecker (Maxis/Electronic Arts)

Hecker focuses on solving hard game design and technical problems found at the intersection of gameplay, aesthetics, and engineering. He is an outspoken advocate for pushing the current boundaries of design and interactivity, in the hope that games will achieve their full potential as an art and entertainment form. To this end he helps organize the yearly Indie Game Jam and the Experimental Gameplay Workshop, and his recent work at Maxis has centered around using advanced proceduralism to enhance player creativity and agency. Hecker has been on the advisory board for the Game Developers conference for many years and is a regular speaker at the GDC, Siggraph, and other conferences. A frequent contributor to *Game Developer* magazine, Hecker was the technical columnist for the magazine for two years and the editor-at-large for three. Before joining Maxis he was an indie game developer for 8 years with his company definition six, inc. He is also on the editorial board of the computer graphics research publication, *The Journal of Graphics Tools.*

Exotic AI Techniques for *Sims 3*
Richard Evans (Electronic Arts)

Evans will show some of the more unusual AI techniques we are experimenting with in *Sims 3.* These include very long-term planning, autonomous traits, and a new socializing model based on overlapping normative processes. He will show how these technology components address two high-level design goals: to make each Sim be a unique snowflake, and to move up Maslow's hierarchy of needs. He will demonstrate these ideas working in action in our 2D experimental testbed.

Richard Evans is senior AI engineer on *The Sims 3* at Electronic Arts, where he is responsible for the AI architecture, and also likes to get involved in game design. Previously, he was head of AI at Lionhead Studios, where he designed and implemented the AI for *Black & White.* The artificial creature in *Black & White* holds the Guinness world record for most intelligent being in a game.

A Work in Progress: Writing AI for *Civilization*
Soren Johnson (EA Maxis)

As one of the best-loved single-player strategy games, *Civilization* relies heavily on its AI to provide an engaging experience for the player. A review of the game's development suggests answers to many of the questions that often plague AI developers. How do we make the AI fun? Do we want the AI to win? Should the AI cheat? If so, how much? Should we adjust the game design to accommodate the limitations of the AI? Can the AI behave like a human? Should it? When and how should the AI be developed? What happens if we expose the AI to the modding community?

Soren Johnson served as the project lead, lead designer, and AI programmer for Sid Meier's *Civilization IV,* which was Gamespy's game of the year for 2006. He also programmed the AI and codesigned *Civilization III.* He joined Firaxis in 2000, after serving an internship at Electronic Arts working on *Knockout Kings* for the PSX. Soren has completed a BA in history and an MS in computer science from Stanford University. His thoughts on game design can be found at designernotes. com.

Invited Talk by Peter Molyneux
Peter Molyneux (Lionhead Studios)

Peter Molyneux is one of the best-known names in the international world of computer games. He cofounded Bullfrog Productions in 1987 and created a new genre of computer games, "the god game" with the release of *Populous.* Since then Peter has been responsible for a string of massive selling games including *Powermonger, Theme Park, Magic Carpet* and *Dungeon Keeper.* Cumulative sales of these Bullfrog games are around ten million worldwide. In 1997 Peter left Bullfrog Productions to form a new games development company Lionhead Studios. The company has released five games *Black & White* in 2001, *Fable* in 2004 *Black & White 2* (PC), *The Movies* (PC) and *Fable The Lost Chapters* (PC and Xbox) in 2005. Cumulative sales are approaching the 5 million mark. Lionhead now numbers over 135 employees. In April 2006 Lionhead Studios was sold to Microsoft Corp.

Molyneux is recognized as one of the computer games industry's most articulate and eloquent speakers on the subject of the development of computer games. He has recently received an honorary doctorate from the University of Abertay and was inducted into the Academy of Interactive Arts and Sciences Hall of Fame. Peter was also awarded an Order of the British Empore (OBE) in the Queen's 2005 New Years Honours List for services to the computer video games industry.

The Illusion of Life, Revisited
Ken Perlin (New York University)

Many years ago, Walt Disney spoke of the quest to create the "illusion of life." In fact in every era of human history, this quest has evolved new kinds of literacy, from the first cave paintings to the written word, music, drama, cinema, animation and beyond. Recently it has become possible to create this illusion interactively. But what makes for an effective experience, once an audience can respond back? What makes us care about an interactive character? Perlin will show some recently developed techniques for breathing life into interactive characters. These techniques may point the way to a new era where cinema intersects with interactive narrative and on-line community.

And we're also going to make sheep waltz.

Ken Perlin is a professor in the department of computer science at New York University, He was founding director of the Media Research Laboratory and also directed the NYU Center for Advanced Technology from 1994- 2004. His research interests include graphics, animation, user interfaces, science education and multimedia. In January 2004 he was the featured artist at the Whitney Museum of American Art. In 2002 he received the New York City Mayor's award for excellence in science and technology and the Sokol award for outstanding science faculty at NYU. In 1997 he won an Academy Award for technical achievement from the Academy of Motion Picture Arts and Sciences for his noise and turbulence procedural texturing techniques, which are widely used in feature films and television. In 1991 he received a presidential Young Investigator Award from the National Science Foundation.

Perlin received his PhD in computer science from New York University in 1986, and a BA in theoretical mathematics from Harvard University in 1979. He was head of software development at R/GREENBERG Associates in New York, NY from 1984 through 1987. From 1979 to 1984, he was the system architect for computer generated animation at Mathematical Applications Group, Inc., Elmsford, NY, where the first feature film he worked on was *TRON.* He has served on the board of directors of the New York chapter of ACM/SIGGRAPH, and currently serves on the board of directors of the New York Software Industry Association.

Invited Talk by Neil Young
Neil Young (EA Los Angeles)

As vice president and general manager of EA Los Angeles (EALA), Neil Young oversees all aspects of the studio that is responsible for the blockbuster franchises, *Medal of Honor*, *Command & Conquer,* and *The Lord of the Rings.* Notably, Young was instrumental in securing the ground-breaking long term agreement with Academy Award winner

Steven Spielberg who is currently collaborating with the game makers at EALA to create three new original franchise properties.

Prior to taking the helm of EALA, Young was general manager of the award-winning Maxis studio, where he was responsible for delivering *The Sims • 2,* the sequel to the bestselling PC game of all time. In 2002 and 2003, Young led the development of the first The Lord of the Rings games at EA Redwood Shores - *The Lord of the Rings, The Two Towers,* and *The Lord of the Rings, The Return of the King.*

British-born Young began his career in the interactive entertainment industry in 1988, as a programmer and then producer at UK based Imagitec & Probe Software respectively. In 1992 Young joined Virgin Interactive when he moved to the United States. At Virgin, he produced a number of Disney-licensed titles and was promoted to vice president for product development. By 1997, Young moved on from Virgin and was named vice president and general manager of ORIGIN Systems, a subsidiary of Electronic Arts. During his time at ORIGIN Systems, Young supervised the launch of the world's first massively multiplayer online roleplaying game, *Ultima Online.*

Since that time, Young has flourished at EA. He was the creator and driving force behind *Majestic,* the first Internet-based interactive game that places players in the center of an unfolding conspiracy-thriller. *Majestic* blurred the line between fiction and reality by engaging players through nontraditional gaming media such as the telephone, e-mail, and fax.

Satisfying Player Needs: Understanding the Diversity of Play Styles
Chris Bateman, Managing Director of International Hobo

When we look at games as tools for play, we see that different play styles exist - and that different types of play are enjoyed by different people. From this, we gain perspective regarding how to meet the play needs of the audience. Psychological instruments such as Myers-Briggs typology and Temperament Theory can help explain the differences in player abilities and needs, while instruments such as Ekman's Facial Action Coding System provide an observational approach. By approaching game design from a psychological perspective we are better informed to make the important choices. Bateman considers the existing models of play styles, and their implications for game design.

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