Olaf Vancura, PhD
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C-level executive in Product Development, R&D and Management. Inventor with 80+ U.S. patents and comprehensive background in IP and licensing. Slot machine gaming architect with record of successful premium games (some $8B+ wagered to date). Mathematical, analytical and strategic consultant for gaming industry. Synthesizer, problem solver, author, public speaker, expert witness.

Education

PhD Physics, The Johns Hopkins University, Baltimore, MD
MA Physics, The Johns Hopkins University, Baltimore, MD
BS Electrical Engineering, Santa Clara University, Santa Clara, CA

Experience

Action Sports, Founder, CTO, Managing Member, 2021-present
- *R&D effort, implementation for sports wagering analytics company*

Free Slot Games of Las Vegas, Founder, CEO, Managing Member, 2014-2021
- *Raised seed capital, led startup mobile app company specializing in free-to-play social casino space*

American Gaming Systems, Vice President of Game Development, 2010-2014
- *Led R&D team of 65 with annual budget of $8+MM for Class 2 (bingo-based) & 3 (traditional) gaming*
- *Set strategic direction for company's R&D, technology, IP, market positioning and games*
- *Responsible for all game design, brand licensing and engineering development including platform, hardware, software and content*
- *Spearheaded turnaround of primary R&D center in Toronto (producing 4 titles per year), through change management, into a highly efficient team (producing 25 titles per year)*
- *Staffed and launched new R&D center in Las Vegas with core competencies in mechanical hardware, design and firmware*
- *Oversaw development of new Roadrunner gaming platform, regulatory approval within 15 months*
- *Supervised product data analytics engineering and member of analytics executive team*

Game Ingenuity, Founder, President, 2008-2012
- *Startup game design company, rights sold to American Gaming Systems*

Gaming Entertainment Inc, Vice President, 2008-2009
- *Design and mathematical analysis of casino table games*

Mikohn Gaming/Progressive Gaming Int'l, VP of Game Development, Chief Creative Officer, 1997-2006

- *Led R&D team of 25 for Class 3 (traditional casino) gaming*
- *Vaulted company, new to games, into Top 3 position in lease/participation games*
- *Responsible for all game design, development and brand licensing*
- *Set strategic direction for company's games division and IP*

Entergaming, Founder, President, 1997-2004

- *New game design, consultant for game design, mathematical and regulatory analysis*

Tufts University Experimental College, Instructor, 1995-1997

- *Developed and taught Casino Gambling curriculum, nominated "Best Course at Tufts"*

Harvard-Smithsonian Center for Astrophysics, Astrophysicist, 1993-1997

- *Theoretical shock wave modeling through computer coding and simulation*
- *Specification of Data Validation & Verification for Chandra X-Ray Observatory*
- *Analysis, interpretation and scientific publication of astrophysics projects*

Harvard University, Post-Doctoral Fellow, 1992-1993

- *Analysis, interpretation and scientific publication of astrophysics projects*

Publications

Books

Smart Casino Gambling, Olaf Vancura (Index Publishing, 1996)

Presents a mathematical approach to casino games

Knock-Out Blackjack, Olaf Vancura & Ken Fuchs (Huntington Press, 1998, 2016)

Presents a new, easy to learn/use card-counting system

Named by Casino Player magazine as one of the 20th century's "Top 100 Events in Gaming"

Finding the Edge, Mathematical Analysis of Casino Games, Olaf Vancura, Judy A. Cornelius and William R. Eadington, editors (University of Nevada Press, 2000)

Presents a series of academic essays on casino games

Advantage Yahtzee, Olaf Vancura (Huntington Press, 2001, Puzzlewright, 2010)

Presents the solution and optimal strategy to maximize expected score in Yahtzee

In-Casino Publication for General Audiences

Understanding the Odds, Olaf Vancura, (American Gaming Association), distributed by the AGA in
U.S. casinos nationwide

Presents a simple-to-understand explanation of the house advantage and how it affects players

Academic

20 published articles in refereed astrophysics journals
Selected Articles:

"A Multiwavelength Study of the Supernova Remnant N49 in the Large Magellanic Cloud", Olaf Vancura,
William P. Blair, Knox S. Long & John C. Raymond, *Astrophysical Journal*, 1992, 394, 158
"Far-Ultraviolet Observations of the Supernova Remnant N49 Using the Hopkins Ultraviolet Telescope",
Olaf Vancura et al., *Astrophysical Journal*, 1992, 401, 220
"A Study of X-ray and Infrared Emissions from Dusty Nonradiative Shock Waves", Olaf Vancura, John C.
Raymond, Eli Dwek, William P. Long, Knox S. Long and Scott Foster, *Astrophysical Journal*, 1994, 431,
188
"Cooling, Sputtering, and Infrared Emissions from Dust Grains in Fast Nonradiative Shocks", Eli Dwek,
Scott M. Foster & Olaf Vancura, *Astrophysical Journal*, 1996, 457, 244

Gaming

"A Computer Teaches Itself to Play Blackjack", Olaf Vancura, in Finding the Edge, 2000
Presents design and results of a neural network learning to play blackjack
"A Study of Index Rounding in Card-counting", Ken Fuchs & Olaf Vancura, in Finding the Edge, 2000
Presents a study of index elasticity for blackjack card-counting
"Knock-Out Blackjack: The Easiest Card-Counting System Ever Devised", *Casino Player* magazine
Cover Story, Olaf Vancura & Ken Fuchs, October 1998
Presents an introduction to the Knock-Out card-counting system

Game Design & Development

Selected Slot Titles as Chief Architect (oversight of all specifications, design and development)

• Yahtzee® Bonus (spinning reel)
• Yahtzee® Take a Chance (spinning reel)
• Yahtzee® (video)
•,Yahtzee® Mystery Winner (video)
• Yahtzee® Looking for Love (video)
• Battleship® All Aboard (video)
• Battleship® Winning Encounter (video)
• Clue® Winning Solution (video)
• Ripley's Believe It or Not!® Adventures in Trivia (video)
• Ripley's Believe It or Not!® The Adventure Continues (video w/ oversized top lightbox)
• Liberty Ball (spinning reel w/ mechanical pachinko)
• Kazoingo (spinning reel w/ mechanical pachinko)

• Trivial Pursuit® Easy As Pie (video w/ oversized top lightbox)
• Garfield® It's All About Me! (video)
• Ripley's Believe It or Not!® (video w/ mechanical wheel)
• Blackbeard's Treasure (video w/ mechanical wheel)
• Are You Smarter Than A 5th Grader?® (video w/ oversized top video)
• Family Feud® (video w/ oversized top video)
• Caribbean Pearls (video w/ mechanical pachinko)
• Venice Dreams (online video)
• Ripley's Believe It or Not!® Big Wheel (online video)

Additional Activities

Academic Invited Talks (selected)

• Dartmouth Chance Lecture
• UNLV Excellence in Gaming
• Cornell World Class Masters
• Mensa Annual Gathering
• University of Nevada Reno Executive Development Conference
• University of Nevada Reno Executive Graduate Certificate Course: Quantitative Methods & Analysis in the Gaming Industry (2-week course)
• National Institute of Standards and Technology

Appearances

Multiple national television specials related to gambling, game design, development, career

Consulting (selected)

Foxwoods Casino, American Gaming Systems, Mikohn Gaming, Genesis Gaming, GG Gaming, G2 Game Design, GameTech Int'l, DP Stud, Prof. Bill Eadington (University of Nevada Reno), Prof. John Gwynn (Cal State - Sacramento)

Expert Witness Consulting (selected)

Retained by Bally, IGT, Scientific Games, State of Kansas, Pace-O-Matic