

Olaf Vancura, PhD

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C-level executive in Product Development, R&D. Inventor with 80+ U.S. patents and comprehensive background in IP prosecution and brand licensing. Slot machine game architect with record of successful premium games (some \$8B+ wagered to date). Synthesizer, problem solver.

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, implementation for startup sports wagering analytics company*

Consultant, 2021-present

- *Game design, R&D, product strategy, analytics, mathematics, IP, expert witness*

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)*
- *Launched new R&D center in Las Vegas with core competencies in mechanical hardware, game design, software and firmware*
- *Oversaw development of new Roadrunner gaming platform, regulatory approval within 15 months*
- *Supervised product data analytics engineering and member of performance 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 space*
- *Responsible for all game design, development and brand licensing*
- *Set strategic direction for company's games division and IP*

Entergaming, Founder, President, 1997-2004

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

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 & 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, published by the American Gaming Association, distributed in U.S. casinos nationwide
Presents a simple-to-understand explanation of the house advantage and how it affects players

Academic (selected)

20 published articles in refereed astrophysics journals

"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 Articles

"A Computer Teaches Itself to Play Blackjack", Olaf Vancura, in Finding the Edge, 2000
Presents design, implementation 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

Inventions (selected)

80+ patents issued in the United States, additional worldwide

U.S. Patent 9,830,773, Inventors: Olaf Vancura, Terrance W. Oliver
Apportionment of Payout of Casino Game with Escrow

U.S. Patent 7,572,182, Inventor: Olaf Vancura
Knowledge-based Casino Game and Method Therefor

U.S. Patent 7,297,059, Inventors: Olaf Vancura, Scott Lewis
Progressive Gaming System and Method Having Fractional Progressive Jackpot Awards

U.S. Patent 7,284,756, Inventors: Jesse E. Pierce, Olaf Vancura
Method for Operating Mechanical Casino Bonus Game in the Presence of Mechanical Bias

U.S. Patent 7,226,357, Inventor: Olaf Vancura

Mechanical Wheel Casino Game of Chance Having a Free-Motion Internal Indicator and Method Therefor

U.S. Patent 6,916,245, Inventors: Olaf Vancura, Terrance W. Oliver
Method for Wagering on Baccarat Tie

U.S. Patent 6,666,765, Inventor: Olaf Vancura
Casino Game and Method Having a Hint Feature

U.S. Patent 6,033,307, Inventor: Olaf Vancura
Gaming Machines with Bonusing

Game Design & Development (selected, as Chief Architect)

- Yahtzee® Bonus & Yahtzee® Take a Chance (spinning reel)
- Yahtzee®, Yahtzee® Mystery Winner & Yahtzee® Looking for Love (video)
- Battleship® All Aboard & Battleship® Winning Encounter (video)
- Clue® Winning Solution (video)
- Ripley's Believe It or Not!® Adventures in Trivia & Ripley's Believe It or Not!® The Adventure Continues (video)
- Liberty Ball & Kazoingo (spinning reel w/ mechanical pachinko)
- Trivial Pursuit® Easy As Pie (video)
- Garfield® It's All About Me! (video)
- Ripley's Believe It or Not!® (video w/ 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)
- Ripley's Believe It or Not! !® Big Wheel (online video)

Additional Activities

Academic Invited Talks

- Dartmouth Chance Lecture series
- UNLV Excellence in Gaming series
- University of Nevada Reno Executive Development conference
- Cornell World Class Masters
- Mensa Annual Gathering
- 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 and development

Consulting (selected)

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

Expert Witness Consulting (selected)

Retained by counsel for Bally, IGT, Scientific Games, State of Kansas, Diogenes / Colossus, Pace-O-Matic