David Crane

Curriculum Vitae

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Employment History

January, 2011 to present — **EXPERT CONSULTANT, SGK SERVICE INC.**
Performing expert witness consulting services, marketed through SGK.

January, 2011 to September, 2012 — **SENIOR DIRECTOR, SPECIAL PRODUCTS**, Viacom / MTV Networks / Nickelodeon.
Publisher of online and mobile games.

October, 2009 to January, 2011 — **FOUNDER AND CHIEF TECHNOLOGY OFFICER, APPSTAR GAMES, INC.**
Technology start-up involved in the development of an iOS technology base to allow for rapid deployment of games to the iPhone and iPad.

November, 1995 to September, 2009 — **FOUNDER AND CHIEF TECHNOLOGY OFFICER, SKYWORKS INTERACTIVE, INC.**
Game publisher: Advergaming, casual online, and iPhone / iPad mobile.

December, 1988 to September, 1995 — **VICE PRESIDENT, ADVANCED RESEARCH AND DEVELOPMENT, ABSOLUTE ENTERTAINMENT.**
Developer and publisher of console video games.

September, 1987 to December, 1988 — **DIRECTOR OF TECHNOLOGY, HASBRO ELECTRONICS.**
On the development team which created the first consumer Interactive Video Player (known as the Nemo or Isix device).

October, 1979 to April, 1987 — **FOUNDER AND SENIOR GAME DESIGNER, ACTIVISION INC.**
Founder of the first third-party video game cartridge publisher. Built a product line which took the company from start-up to over $200 million in three years.

September, 1977 to September, 1979 — **VIDEO GAME DESIGNER, ATARI INC.**
Designed early video game cartridges for Atari's 2600 Video Computer System. Accounted for $15 million of the company's 1978 revenues.

June, 1975 to September, 1977 — **ASSOCIATE ENGINEER, NATIONAL SEMICONDUCTOR.**
Linear Integrated Circuit design group developing analog and analog to digital circuits.

Education

DEVRY INSTITUTE OF TECHNOLOGY, PHOENIX. Graduated June 1975 with BSEET. Completed 4 year degree in 33 months through advancement testing.

Professional Achievement Summary

- 40+ years of experience in video game hardware and software design
- Designed or co-designed more than 90 entertainment products.
- Product revenues in excess of $400 million retail.
- Dozens of industry awards, including Designer of the Year, Parent's Choice, and prestigious 2003 Game Developer Choice Award for contribution to the field.
- Recipient of the inaugural AIAS Pioneer Award.
- Several games with unit sales over 1,000,000.
- Profiled in national press, including Forbes and Newsweek.
- Pitfall! game was so popular that it spawned a Saturday morning cartoon show.
- Produced hit products with sales throughout the Americas, Europe, and Japan.
- Author of US Patent #4,644,495 for an improved Video Memory System.
- Appeared in multiple volumes of Who's Who in Consumer Electronics.

Sony Exhibit 1005
Sony v. Quantum

Recent Expert Consulting Cases

Year	Law Firm	Client	Case	Description	Source Code	Report or decl.	Deposition	Court Testimony
2022	KXT Law	Sony Interactive / Bluepoint Games	IPR petition	IPR of multiple patents asserted by Quantum Imaging LLC		√√√√		
2022	Arnold & Porter	MGM Resorts (Entain)	IPR petition	IPR of patent asserted by GAN		√		
2021	Orrick Herrington & Sutcliffe LLP	Zynga	IPR2022-00199 IPR2022-00200 6:21-CV-00331-ADA	IPR and Invalidity analysis of patents asserted by IGT	√	√√√	√√	
2021	Polsinelli	Utherverse	Litigation	Patent enforcement				
2021	Finnegan	Playtika	NEXRF Corp. v. Playtika Ltd. 3:20-cv-603	Invalidity analysis of asserted patents; Prior Art analysis				
2021	Torkin Manes LLP	Safeware Enterprises v. ProServeIT	Pre-litigation	Analysis of software development project and deliverables		√		
2021	Pinsent Masons LLP	Oovee LTD	London Court of International Arbitration LCIA Arb. No. 204597	Spinoff accused of source code piracy	√	√		
2021	Mintz Levin PC	Spin Master, Ltd.	Interactive Play Devices LLC v. Spin Master, Ltd. 6:20-cv-00066-ADA	Invalidity analysis of asserted patents; Prior Art analysis	√	√		
2019	Reed Smith LLP	Electronic Arts	Stone Interactive Ventures LLC v. Electronic Arts Inc. 6:19-cv-00542-ADA	IPR of patents owned by Stone Interactive Ventures		√		
2019	Devlin Law Firm LLC	Blue Spike LLC	Blue Spike LLC, et. al. v. Pandora Media, LLC 2:19-cv-00748-JAK-JPR	Patent infringement analysis	√			
2018	Buether Joe & Carpenter, LLC	Infernal Technology, LLC	Infernal v. Crytek GMBH 2:18-cv-00284-JRG	Patent enforcement	√	√		
2018	Buether Joe & Carpenter, LLC	Infernal Technology, LLC	Infernal v. Microsoft 2:18-cv-00144-JRG	Patent enforcement	√	√		
2018	Rosenberg Martin Greenberg; Gilberts LLP	Amtote International Inc.	Amtote v. Kentucky Downs LLC 1:15-CV-00047-GNS	Trade Secret case regarding horse racing wagering technology	√	√		
2018	Rosenberg Martin Greenberg LLP	Parimax Holdings LLC	Parimax v. Kentucky Downs LLC 1:15-CV-00082-GNS	Trade Secret case regarding horse racing wagering technology	√	√		
2018	Kilpatrick Townsend & Stockton LLP	Gree, Inc.	Supercell, OY v. Gree, Inc., PGR2018-00008, PGR2018-00055, PGR2018-00047, PGR2018-00029	Numerous PGRs relating to patents owned by Supercell. (multiple depositions)		√	√√√√	
2018	Maier & Maier	Gree, Inc.	Supercell, OY v. Gree, Inc., PGR2018-00066, PGR2018-00037, PGR2018-00061	Numerous PGRs relating to patents owned by Supercell. (multiple depositions)		√	√√√	
2018	n/a	Behaviour Interactive	Bethesda Softworks LLC v. Behaviour Interactive, Inc. and Warner Bros. Entertainment, Inc.	Pre-litigation analysis for game developer re video game-related copyright infringement and theft of trade secrets		√		
2017	Gerard Fox Law, P.C.	Just Games Interactive	JAMS Arbitration Proceeding, Just Games Interactive v. Scopely, Inc.	Source-code Commit Analysis		√		
2017	Gilbert's LLP	Yuqing Zou	Hao Wen V. Yuqing Zou	Work Product Analysis		√		

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2017	Desmarais, LLC	DoubleDown	Case No.: 2:16-cv-00858-RCJ-VCF, CG Technology v. DoubleDown	Patent Analysis and Prior Art Research				
2017	Duane Morris LLP	Deported Games	n/a	Pre-litigation, video game-related contract dispute	√	√		
2017	Gerard Fox Law, P.C.	CI Games S.A.	JAMS Arbitration Proceeding, Original Force, Inc. v. CI Games S.A.	Video game-related contract dispute		√		
2016	The Paynter Law Firm, PLLC	Bubble Pony, Inc. and Patrick Glynn	Bubble Pony, Inc., et al v. FacePunch Studios Ltd., et al	Contractual dispute regarding software development for video games.		√		
2016	Shook, Hardy & Bacon LLP	Blizzard / Riot Games	IPR2016-01885: Game and Technologies v. Blizzard / Riot Games	U.S. Patent No. 8,253,743 re avatar accessories in a video game.		√	√	
2015	Reed Smith	Electronic Arts	Civil Action No. 1:15-cv-00150, White Knuckle v. Electronic Arts	U.S. Patent No. 8,540,575 re a system for updating real time events in a video game.		√	√	
2015	Duane Morris LLP	Electronic Arts	White Knuckle v. Electronic Arts	IPR relating to U.S. Patent No. 8,540,575 re a system for updating real time events in a video game.		√		
2015	Duane Morris LLP	Anki, In.	International Case No. 4b O 114/15, Andreas Stadlbauer v. Anki Inc.	Affidavit re EP No. EP 1 381 437 Patent, R.O.B. Robot prior art		√		
2015	Quarles & Brady, LLP	Sony Computer Entertainment of America LLC	Case No. 5:14-cv-03928-PSG, RDMI LLC v. SCEA LLC	Video game related patent infringement case.		√		
2015	Orrick, Herrington & Sutcliffe LLP	TimePlay, Inc.	Case No.2: 15-cv-05202-SJO-JC, TimePlay Inc. v. Audience Entertainment Inc.	Assertion of U.S. Patent 8,951,124 re multi-player gaming in movie theaters.				
2015	Winderweedle, Haines, Ward & Woodman	Frima Studios, Inc.	Case No. 2012-CA-1643, 10 Vox Entertainment v. Frima Studios, Inc.	Contractual dispute regarding software development for video games.		√		
2015	Law Offices of Gerald Fox	Min Productions Pte. Ltd.	Case No. 8:14-cv-00941, Min Productions Pte. Ltd. v. FireForge, Inc., et al.	Contractual dispute regarding software development for video games.		√		
2015	Farney Daniels PC	Recognicorp	*Ex Parte* Reexamination 90/012,832, Recognicorp v. Nintendo	Defense of U.S. Patent No. 8,005,303 re facial image compression system.	√	√		
2015	Munck Wilson Mandala, LLP	Cinsay, Inc.	Civil Action No. 3:13-cv-3628-K, Cinsay, Inc. v. Joyus, Inc.	Patent infringement case involving the placement of interactive advertising within video productions.	√	√		
2015	Lowenstein & Weatherwax LLP	IPLearn-Focus	Case IPR2015-00095, IPLearn-Focus v. Microsoft	IPR re US Patent 8,475,174 relating to a computer-implemented learning method		√	√	
2015	Tensegrity Law Group, LLC	IPLearn-Focus	Case No. 3:14-cv-00151 JD, IPLearn-Focus v. Microsoft	Assertion of US Patent 8,475,174174 relating to a computer-implemented learning method	√	√	√	√
2014	Duane Morris LLP	Sony Computer Entertainment of America LLC	Civil Action No. 2:13-cv-00757, Babbage Holdings, LLC v. SCEA et al.	Claim Construction analysis for a video game related patent infringement case.				
2013	Derwin & Siegel LLP	Scribd, Inc.	n/a	Patent Prosecution		√		

Year	Law Firm	Client	Case	Description	Source Code	Report or decl.	Deposition	Court Testimony
2013	Jones Day	Zynga	CIVIL ACTION NO. 2:12-CV-68, PMC, LLC v. Zynga	Patent, Prior Art, and Prosecution Laches Research and report		√		
2013	Feder Kaszovitz LLP	Jakks Pacific	Civil Action No. 1:11-at-00833, Shelly Conty & Cindy Reichman v. Jakks Pacific, Inc.	Patent infringement case involving electronic toy		√		
2012	Gibson, Dunn & Crutcher	Facebook, et al.	Case No.: 3:12-cv-00501-BEN-RBB, Gametek LLC v. Facebook, et al.	U.S. Patent No. 7,076,445 re in-game transactions				
2012	Durie Tangri	Zynga	Lexos Media v. Zynga	Patent and Prior Art Research				
2012	Duane Morris LLP	Sony Computer Entertainment of America Inc	Case No. 1:11-cv-00368-RGA, Walker Digital, LLC v. Sony Computer Entertainment Inc. et al.	Video game related patent infringement case ('828 patent) involving online game tournaments		√		
2012	Duane Morris LLP	Sony Computer Entertainment of America Inc	Case No. 1:11-cv-00696-RGA, Walker Digital, LLC v. Sony Computer Entertainment Inc. et al.	Video game related patent infringement case ('866 patent) involving adaptation of game devices to playing preferences		√		
2012	Duane Morris LLP	Sony Computer Entertainment of America Inc	Case No. 1:11-cv-00322-SLR, Walker Digital, LLC v. Sony Computer Entertainment Inc. et al.	Video game related patent infringement case ('143, '382 patents) involving remote authentication of computer outcomes		√		
2012	Hagens Berman LLP, Mintz Levin	Shinsedai	Case No. 11-CV-2799-CAB-MDD, Shinsedai Company, LTD v. Nintendo Company, LTD, et al.	Patent Assertion for a motion-controlled video game controller	√	√	√	

Selected Industry Awards

2017 International Video Game Hall of Fame, Walter Day Lifetime Achievement Award

The 2017 class of inductees were selected by accomplished gamers, journalists and video game industry executives who have extensive knowledge of the achievements in gaming, and determined by open nominations and a final vote by the IVGHOF Board of Directors.

2010 Academy of Interactive Arts and Sciences Pioneer Award

At the 13th Annual Interactive Achievement Awards held on February 18, 2010 Activision co-founder David Crane was presented with the Academy's first ever Pioneer Award, celebrating his contribution to the creation of the Video Game Industry.

2009 IGN.COM "The Top 100 Game Creators of All Time"

In 2009 IGN.COM ran a feature called "The Top 100 Game Creators of All Time."
David Crane was featured at #12.

2003 Game Developers Choice "First Penguin Award"

"The IGDA's First Penguin award celebrates the courage and bravery of a developer who is the first to test the proverbial waters, in the face of uncertainty of success or failure. Receiving a "penguin" serves as an inspiration and lesson to the community."

1990 Parent's Choice Award, A Boy and His Blob

1989 Video Games and Computer Entertainment, Best Strategy Game, A Boy and His Blob

1989 Video Games and Computer Entertainment, Most Innovative Game, A Boy and His Blob

1983 Video Games Magazine, Player's Choice Award, Pitfall!

1982 VIRA Award, Video Game Designer of the Year

1982 Video Game Update, Designer of the Year

1981 Best Audio and Visual Effects, Fishing Derby

Professional Associations

Academy of Interactive Arts and Sciences (AIAS), Member and Pioneer Award recipient

Dedicated to promoting awareness of the art and science of interactive games and entertainment.

International Game Developer's Association (IGDA), Member

To promote the growth of our industry and the growth of creative endeavors;
To ensure a professional standard of workplace environment for all development;
To publicly establish and communicate our standards as media professionals.

National Videogame Museum, Founding Board Member

A non-profit charity formed to preserve and archive the history of the video game industry.

Technical Expertise

David Crane is an accomplished electronic engineer with experience in *Hardware Design* in the fields of *Analog Circuitry, Digital Circuitry, Semiconductor Design, Computer Architecture*, and *Circuit Layout*. This expertise in Hardware Design led into a world-class career in *Video Game Design, Engineering*, and *Programming*.

Such a combination of training and experience results in expertise in the analysis of *Electronic Hardware* (with an emphasis in Video Systems), *Reverse Engineering* of hardware/software systems, *Game Copyright Issues, Patent Analysis*, and *Source Code Analysis* of code written in any of *more than 25 Computer Programming Languages.*

Expertise specific to the Video Game Industry includes an intimate knowledge of the *Hardware, Video Systems, Memory Maps, Controllers, Multi-player systems*, and *Programming Techniques* found in *More than 25 Video Game Consoles and Platforms.*

Mainframe Computer Languages:
FORTRAN
RPG
COBOL
BASIC

Microprocessor Assembly Languages:
6502
Intel 8080
National Semiconductor PACE 16 bit
National Semiconductor SC/MP 8 bit
GI-1610
Zilog Z80
65816
Intel 8048
8086, 80286

Microprocessor Programming Languages:
C
C++
Objective C
JAVA
Brew

Microcontroller Assembly Languages:
NEC microcontroller assembly language

Scripting Languages:
Lingo
Actionscript
Lua
Javascript
HTML, HTML-5

Engineering Languages:
SPICE
VHDL

Video Game Consoles and Platforms:
Atari 2600
Atari 5200
Atari 7800

Atari 400
Atari 800

Magnavox Odyssey II

Mattel Intellivision

Colecovision

Apple II

MS-DOS

Commodore C64
Commodore C128

Nintendo NES
Nintendo SNES
Nintendo Game Boy
Nintendo DS

Sega Master System
Sega Genesis
Sega CD

Sony Playstation

Microsoft XBOX
Microsoft XBOX 360

Nokia Series 60 feature phones
LG VX4400
LG VX6000

Apple iPhone
Apple iPod touch
Apple iPad

Developed Products and Publications

iPhone / iPad Games:

Arcade Bowling™
Ten Pin Championship Bowling®
Boardwalk Games™
Arcade Hoops Basketball™
3 Point Hoops®
Arcade QB Pass Attack™
Field Goal Frenzy™
Stellar Blast!™
Iron Horse™
2600 Magic
Dragster Magic

Console Games:

Pitfall!™
Pitfall II, Lost Caverns™
Freeway™
Laser Blast™
Fishing Derby™
Dragster™
Grand Prix™
A Boy and His Blob™
The Rescue of Princess Blobette™
Little Computer People™
Ghostbusters™
Skateboardin'™
Super Skateboardin'™
The Activision Decathlon™
T*O*Y*S™
Home Improvement: Power Tool Pursuit
Transformers®, Battle to Save the Earth
David Crane's Amazing Tennis™
Battletech: Gray Death Legions
Boxer's Road
The Simpsons: Bart vs. the World
Bart Simpson's Escape from Camp Deadly™
March of the Penguins™
Warrior 2000
CHOMP™
Canyon Bomber™
Outlaw™
Slot Machine™

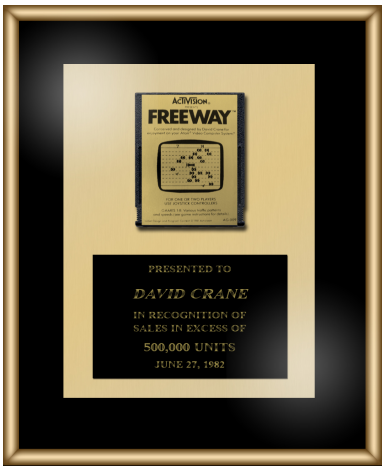
Online Games:

Lotto Letters®
Super Swish
Stellar Blast!™
Mercury® Mariner® Hybrid Infomercial
Lacrosse Shootout
Beach Volleyball
Spiderman® Climbing game
Miller® Seat Salsa
Super Cocoa Man
Break the Rules Hoops
Downfield Strike
Mini Motocross
Pebbles® Robopup Run
Toyota® 4runner® Challenge
Tyco® RC Speed Wrench
Vertical Jam
E.T.'s Adventure
Bubble Yum® Home Run Derby
Bubble Yum® Bullpen Blast
Gummi Bunnies® Egg Hunt
Foul Shot Shootout
LifeSavers® Water Park Pinball
Field Goal Challenge
Creme Savers® Bowling
Golf Solitaire
Skyworks Lanes Bowling
Carefree® on Ice
Gummi Savers® Rock-N-Skate
YIPES!® Photo Safari
Ice Breakers® Slap Shot Shootout
Southpark® Pinball
Breath Savers® Road Rally
Ford® NASCAR® racing challenge
MTv® Cranks Dirt Bike Game
Ice Breakers® Ultimate Bobsled
Breath Savers® Billiards
Snackwells® Chocolate Factory Pinball
Snowboard Big Air
Skate Rage Inline Skating
Candystand™ Miniature Golf
Hole In One Golf
Weather Channel Golf, Master's Version
LifeSavers® Word Challenge
Candystand™ Tennis Open
Mountain Climbing
3 Point Shootout
Grand Slam Pinball
Nabisco World™ Team Racing
The Road™
Soccer Shootout
LifeSavers® Treasure Hunt
Oreo® Adventure
BMW X3 Challenge
LifeSavers® Roll-A-ball
Air Crisps® Slam Dunk
Fruit Chews® BMX
Postopia™ Bowling

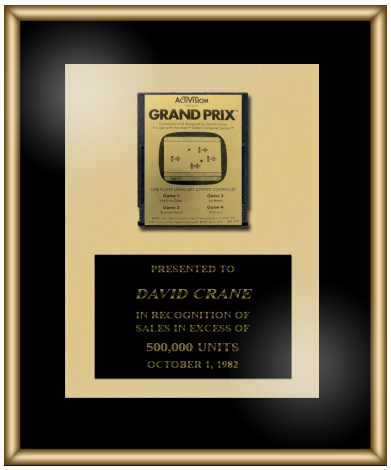
Patent:

US Patent #4,644,495 2/17/87
"Video Memory System"
Assigned to Activision, Inc.

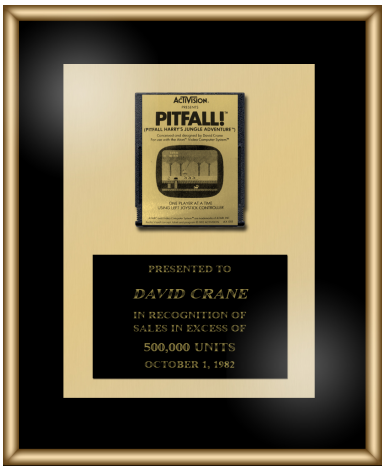
Sales Awards



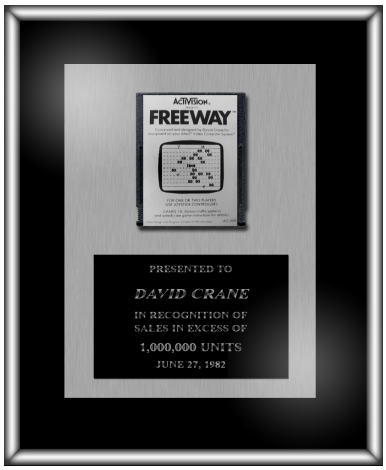
1982 Freeway Gold Cartridge Award, In Recognition of Sales in Excess of 500,000 Units



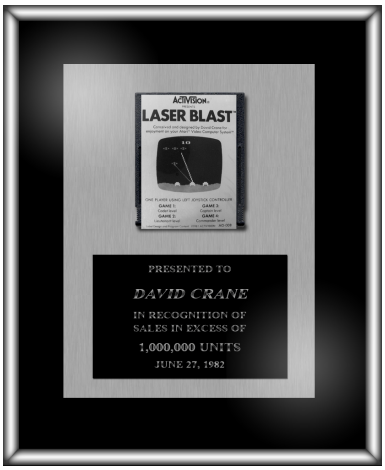
1982 Grand Prix Gold Cartridge Award, In Recognition of Sales in Excess of 500,000 Units



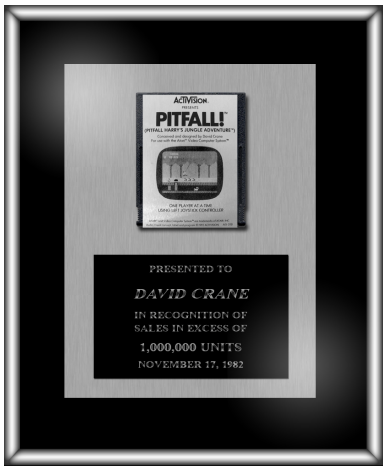
1982 Pitfall! Gold Cartridge Award, In Recognition of Sales in Excess of 500,000 Units



1982 Freeway Platinum Cartridge Award, In Recognition of Sales in Excess of 1,000,000 Units



1982 Laser Blast Platinum Cartridge Award, In Recognition of Sales in Excess of 1,000,000 Units



1982 Pitfall! Platinum Cartridge Award, In Recognition of Sales in Excess of 1,000,000 Units