



ALPHAGO



A MOXIE PICTURES PRODUCTION IN ASSOCIATION WITH REEL AS DIRT "ALPHAGO"
FEATURING LEE SEDOL DEMIS HASSABIS DAVID SILVER FAN HUI MUSIC BY VOLKER BERTELMANN (HAUSCHKA) EDITED BY CINDY LEE ASSOCIATE PRODUCER DANE LARSEN
COLORIST TIM MASICK SUPERVISING SOUND EDITOR GLENFIELD PAYNE, MPSE RE-RECORDING MIXER TOM PAUL MUSIC EDITOR MISSY COHEN, MPSE
EXECUTIVE PRODUCER ROBERT FERNANDEZ DAN LEVINSON PRODUCED BY GARY KRIEG JOSH ROSEN KEVIN PROUDFOOT DIRECTED BY GREG KOHS

alphagomovie.com

PRESS KIT

Directed by:

Greg Kohs

Featuring:

Lee Sedol, Demis Hassabis, David Silver, Fan Hui

Produced by:

Gary Krieg, Josh Rosen, Kevin Proudfoot

Executive Produced by:

Robert Fernandez, Dan Levinson

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FILM SYNOPSIS

With more board configurations than there are atoms in the universe, the ancient Chinese game of 'Go' has long been considered a grand challenge for artificial intelligence. On March 9 2016, the worlds of Go and artificial intelligence collided in South Korea for an extraordinary best-of-five-game competition, coined The Google DeepMind Challenge Match. Hundreds of millions of people around the world watched as a legendary Go master took on an unproven AI challenger for the first time in history.

Directed by Greg Kohs with an original score by Academy Award nominee, Hauschka, AlphaGo chronicles a journey from the halls of Oxford, through the backstreets of Bordeaux, past the coding terminals of DeepMind in London, and, ultimately, to the seven-day tournament in Seoul. As the drama unfolds, more questions emerge: What can artificial intelligence reveal about a 3000-year-old game? What can it teach us about humanity?

DIRECTOR'S STATEMENT

Early in my career I worked at NFL Films. That experience, of being able to see the drama on the field while having access to the people and stories unfolding off the field, has always been a fascinating intersection for me. In my recent film, *The Great Alone*, I was able to explore the epic scale of the Iditarod through the comeback story of a single competitor. In *AlphaGo*, the competition between man and machine provided a similar backdrop, albeit with far larger consequences.

The complexity of the game of Go, combined with the technical depth of an emerging technology like artificial intelligence seemed like it might create an insurmountable barrier for a film like this. The fact that I was so innocently unaware of Go and AlphaGo actually proved to be beneficial. It allowed me to approach the action and interviews with pure curiosity, the kind that helps make any subject matter emotionally accessible.

Unlike the film's human characters - who turn their curious quest for knowledge into an epic spectacle with great existential implications, who dare to risk their reputation and pride to contest that curiosity - AI might not yet possess the ability to empathize. But it can teach us profound things about our humanness - the way we play board games, the way we think and feel and grow. It's a deep, vast premise, but my hope is, by sharing it, we can discover something within ourselves we never saw before.

- **Greg Kohs, Director**

ABOUT GO, ALPHAGO, AND THE GOOGLE DEEPMIND CHALLENGE

This is a story of how history, gaming, computer science, and the world's media converged for an epic seven-day Go match in Seoul.

- The ancient board game Go originated in China more than 3,000 years ago. According to Confucius, Go is one of the four essential arts required of any true Chinese scholar.
- Go is one of the most complex board game ever created with an astonishing 10^{170} possible board configurations - more than the number of atoms in the known universe
- For years, Go has been considered one of the grand challenges of AI and the holy grail for AI research.
- On March 9, 2016, a best-of-five-game competition, coined *The Google DeepMind Challenge Match*, pitted AlphaGo, an artificially intelligent computing system, against Lee Sedol, the greatest Go player of the past decade.
- Before AlphaGo, a computer program had never before beaten a professional human Go player and the consensus among experts was that this breakthrough was a decade away.
- Over 200 million viewers (almost twice the viewership of the 2017 Super Bowl) from around the world tuned in to watch the games.
- This film gives viewers exclusive access to the behind the scenes preparations for this historic event, and never-before-seen footage from the AlphaGo control room during the competition.

SUBJECT BIOS

LEE SEDOL

Go Champion (18 World Titles)

Lee Sedol debuted as a 1 dan professional at the age of 12 in 1995. He won his first domestic title (The 5th Bacchus Cup) in 2000 and his first international title (The 15th Fujitsu Cup) in 2002. Lee was promoted to 9 dan professional rank in 2003. He won the Gold Medal in the 2010 Asian Games in Guangzhou, Men's Team division. He has won over 30 domestic titles and 18 international titles in total (2000 - 2016), more international titles than any player in the world. Lee is known for having a unique and powerful fighting style.

DR. DEMIS HASSABIS

Co-Founder & CEO, DeepMind

Demis Hassabis is co-founder and CEO of DeepMind, a neuroscience-inspired AI company which develops general-purpose learning algorithms and uses them to tackle some of the world's most pressing challenges. A child chess prodigy, Demis coded the classic game Theme Park aged 17. After graduating from Cambridge University with a Double First in Computer Science, he founded videogames company Elixir Studios and went on to complete a PhD in cognitive neuroscience at University College London. The journal *Science* listed his research connecting memory with imagination as one of the top ten scientific breakthroughs of 2007. Demis is a five-time World Games Champion, Fellow of the Royal Society of Arts, and recipient of the Royal Society's Mullard Award and the Royal Academy of Engineering's Silver Medal. In 2017 he was named in the *Time 100* list of the world's most influential people.

PROFESSOR DAVID SILVER

Lead Researcher for AlphaGo

Dr. David Silver leads the reinforcement learning research group at DeepMind. David graduated from Cambridge University in 1997 with the Addison-Wesley award. Subsequently, David co-founded the video games company Elixir Studios, where he was CTO and lead programmer, receiving several awards for technology and innovation. David returned to academia in 2004 to study for a PhD on reinforcement learning with Rich Sutton, where he co-introduced the algorithms used in the first master-level 9x9 Go programs. David was awarded a Royal Society University Research Fellowship in 2011, and subsequently became a lecturer at University College London. David consulted for DeepMind from its inception, joining full-time in 2013. His recent work has focused on combining reinforcement learning with deep learning, including a program that learns to play Atari games directly from pixels (Nature 2015). David led the AlphaGo project, culminating in the first program to defeat a top professional player in the full-size game of Go (Nature 2016). AlphaGo subsequently received an honorary 9 Dan Professional Certification; and won the Cannes Lion award for innovation.

FAN HUI

European Go Champion, 2013-15

Fan Hui became a professional Go player in 1996. He moved to France in 2000 and became the coach of the French national Go team in 2005. He has won 36 tournaments across Europe to date, winning the European Go Championship in 2013, 2014 and 2015, and in 2016 he won the European Professional Go Championship. He is currently ranked as a 2 dan professional.

FILMMAKER BIOS

GREG KOHS

Director

Kohs is a proud native of the Motor City and graduate of Notre Dame. He honed his aesthetic at NFL Films where he received ten Emmy Awards. Greg's films include the award-winning *Song Sung Blue*, which the late Roger Ebert hailed as "Superb," and his most recent award-winning documentary *The Great Alone*. Kohs now lives outside of Philadelphia with his wife and three children.

CINDY LEE

Editor

Cindy Lee is a documentary and narrative film editor based in New York City. She was nominated for an Independent Spirit Award for the film *Una Noche*. Her credits also include the Oscar-nominated film, *No End in Sight*, and *Hot Coffee*, winner of the Sundance Special Jury Prize and National Society of Film Critics Award. TV credits include the Emmy-winning Showtime series *Years of Living Dangerously* and the ESPN 30 for 30 episode, *Chasing Tyson*.

VOLKER BERTELMANN (HAUSCHKA)

Composer

Volker Bertelmann is a German pianist and composer who mainly performs and records under the name Hauschka. He is best known for his compositions in prepared piano. Volker was nominated for an Academy Award for the original score he wrote and performed with Dustin O'Halloran on the film, *Lion*.

END CREDITS

PRINCIPLE CREDITS

Directed by	Greg Kohs
Edited by	Cindy Lee
Produced by	Gary Krieg, Josh Rosen, Kevin Proudfoot
Executive Producers	Robert Fernandez, Dan Levinson
Associate Producer	Dane Larsen
Music by	Volker Bertelmann (Hauschka)
Director of Photography	Greg Kohs
Associate Editors	JiYe Kim, Anna Pinchuk

SCROLLING CREDITS

Featuring

Lee Sedol

DeepMind AlphaGo Team

Demis Hassabis

David Silver

Fan Hui

Aja Huang

Maddy Leach

Julian Schrittwieser

George van den Driessche

Ioannis Antonoglou

Laurent Sifre

Veda Panneershelvam

Chris Maddison

Arthur Guez

Lucas Baker

Thore Graepel

Shane Legg

Commentators

Michael Redmond

Chris Garlock

Kim Seongryong

Yoo Changhyuk

Song Taegon

Lee Hyunwook

Lee-Soyong

Jeong Yoojeong

Go Community

Dr Hong Seok-Hyun

Master Kwon

Joseph Choi

Hajin Lee

Frank Lantz

Andrew Jackson

Myungwan Kim

Hyeyeon Cho

Janice Kim

Yuan Zhou

Nam Chi-hyung

AI Community

Cade Metz
Martin Rees
Nick Bostrom
John Daugman
Fei-Fei Li

Referees

Han Cheolgyun
Kim Sungrae
Han Jongjin
Seo Gunwoo
Lee Dahye

Additional DeepMind AlphaGo Support

Tim Lillicrap
Yutian Chen
Nal Kalchbrenner
Dominik Grewe
Koray Kavukcuoglu
Mustafa Suleyman
Sander Dieleman
John Nham
Marc Lanctot
Shane Legg
Ilya Sutskever
Ziyu Wang
John-Paul Holt
David Szepesvari

DeepMind (Ops Team)

Sarah-Jane Allen
Kayleigh Burgess
Mike Johnson
John Holmes
Helen King
Katie Richards
Courtney Biles
Adam Cain
Max Cant
Aidas Zarskus
Grant Stevens
Peter Yang
Kenneth Seah
Stephan Picard
Rob Peasegood
Stuart Bush

London Production: Moxie Pictures

Sound: Chris Kellett

1st AC: Jessie Brough

Line Producer UK: Helena Reis

Line Producer UK: Sarah Du Casse

DIT UK: James Lewis

Production Assistant UK: Ellie de Rose

Driver UK: Bobby Degale

Runner UK: Riccardo D'Amico

Korean Production: Global Production Network

Line Producer: Clint Caluory

Executive Producer: Tony Choi

Producer: Joyce Chun

Producer: Jia Kim

Producer: Seihoon Heo

1st AC: Matthew Henderson

2nd AC: Bang Dong Hyuk

B Camera: Cho Sung In

B Camera: Hyunjin Bae

1st AC: Jin Seok Seol

Data Supervisor: GD Kwon

Data Manager: Suji Kim

Data Manager: Hong Sung Mun

Sound Mixer: Hansel Gonzalez

Sound Mixer: Jae Seok Lee

Additional Filming UK-FR: Flies Collective

Line Producer: Zach Shedd

Sound Mixer: Matt Petock

1st AC - London - Matthew Henderson

Location Manager - Bordeaux: Rob Huntoon

Assistant Location Manager - Bordeaux: Marie Guerineau Huntoon

Production Assistant - London: Gareth Honey

DIT - London: Joe Douglas, Joe Jamieson

Additional Filming: Across the Pond

Producer: Karen Crookes

Production Manager: Tara Struthers

1st AC: William Roth

Sound: Rob Branch

DIT: Liam Lintonbon

Runner: Cameron Wauchope

Additional Filming US: Flies Collective

Sound Recordist/Sound Mixer: Chris Kellett

Production Assistant: Sean Delahunt

Assistant Camera: Yayo Vang

DIT: Grayson Kohs

Additional Editing: Eugene Yi

Assistant Editor: Andres Vergara

Title Design: Elliott Burford

Design and Animation:

Monica Kim

Waleed Zaiter

JR Schmidt

Animation - Eric Harnden

Design - Pei Liew

Additional Animation: Buck NY

Creative Directors - Orion Tait

Creative Director - Ben Langsfeld

ACD & Design - Justin Fines

Design and Animation - Alexander Perry

Design and Animation - Andreas Bjorn Hansen

Animation - Daniel Oeffinger

Animation - Jose Fuentesw

Executive Producer - Anne Skopas

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Emmett Kim

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James Besley

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Loeb & Loeb LLP

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Colorist - Tim Masick
DI Producer: Avalonne Hall
Digital Conform Artist: John Diesso
Asst. Digital Conform: Pinar Comezoglu
Color Assistant: Brett Price
Head of Production: Nick Monton
Account Executive: Jim Gardner
CO3 Executive Producer: Stefan Sonnenfeld

Visual Effects: Method

Flame Artist - Aaron Neitz
Flame Artist - Louis Schachte
Producer: Connor Callaghan

Sound Design: Harbor Sound

Sup. Sound Editor: Glenfield Payne, MPSE
Dialogue Editor: Ian Gaffney-Rosenfeld
FX Editor: Josh Berger
FX Editor: Michael Odmark
Sound Mix Facility Producer: Gabriela Celi
Head of Sound Mix Facility: Darrell R. Smith

Sound Mixing: Gigantic Post

Re-Recording Mixer: Tom Paul
Mix Tech: Kevin Peters
Executive Producer: Steven Tollen

Offline Editorial: Final Frame New York

Director of Operations: Caitlin Tartaro

Sales Representation: Submarine

Josh Braun
Dan Braun

Ben Braun
Matt Burke

Music written and arranged by: Volker Bertelmann (Hauschka)

Orchestrations:

Stan Koch
Korry McMaster
Roland Nebe
Raffael Seyfried

Additional Music:

Julian Priessen
Roland Nebe
Raffael Seyfried
Nicklas Schmidt

Music Editor: Missy Cohen, MPSE

Orchestra: Budapest Art Orchestra

Conductor: Peter Pejtsik

Sound Engineer: Gabor Buczko

Company: East Connection Music Recording Co.

Recording Producer: Miklos Lukacs

Prepared Piano, Synth & Programming: Volker Bertelmann

Additional Piano: Roland Nebe , Raffael Seyfried

Guitars: Julian Priessen

Violin: Sabine Könner

Score Mixer: Daniel Kresco

Additional Recordings Studios: Studio Zwei Düsseldorf

Composer Assistant: Nina Ditscheid

Composer Agent: Patty MacMillan

Composer Management: Tim Husom at SpectreVision

Volker Bertelmann: Published by Edition Needlewood administered by Bosworth Music GmbH

Additional Music: Pivot Audio

Composer: Guy Amitai

Producer: Neil Devlin

Additional Music : Fall On Your Sword

Composer: Mark Tewarson

Producer: Lucy Alper

Composer: Craig Minowa

"Optimist"

Written and performed by Zoë Keating

020202 Music (ASCAP)

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ZOEKEATING.COM

"Holograms"

Performed by M83

Written by Anthony Gonzalez and Josh Humphrey

Published by Delabel Editions Sarl and Moir Entertainment

Courtesy of Mute

By arrangement with Bank Robber Music

Thanks

6Brothers Go Club

Chateau Eyquem

Dorier-Group, South Korea

Four Seasons Hotel Seoul

In2Events

Jack Morton

Jeux Barjo

KIBA School

Korean Baduk Association

Myongji University

NYU Game Center

Pacific World

RAS Production

Stanford University

The City of London

The City of Seoul

The Inn of Court, Holborn

The Marquis Cornwallis

University of Cambridge

University of Oxford

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