



## Details announced for the Google DeepMind Challenge Match

*Landmark five-match tournament between the Grand Master-defeating Go computer program, AlphaGo, and best human player of the last decade, Lee Sedol, will be held from March 9 to March 15 at the Four Seasons Hotel Seoul.*

**February 22, 2016** (Seoul, South Korea) — Following [breakthrough research](#) on AlphaGo, the first computer program to beat a professional human Go player, Google DeepMind has announced details of the ultimate challenge to play the legendary [Lee Sedol](#) — the top Go player in the world over the past decade.

AlphaGo will play Lee Sedol in a five-game challenge match to be held from Wednesday, March 9 to Tuesday, March 15 in Seoul, South Korea. The games will be even (no handicap), with \$1 million USD in prize money for the winner. If AlphaGo wins, the prize money will be donated to UNICEF, STEM and Go charities.

Regarded as the [outstanding grand challenge](#) for artificial intelligence, Go has been viewed as one of the hardest games for computers to master due to its sheer complexity which makes brute-force exhaustive search intractable (for example there are more possible board configurations than the number of atoms in the universe). DeepMind released details of the breakthrough in a paper published in the scientific journal [Nature](#) last month.

The matches will be held at the Four Seasons Hotel Seoul, starting at 1pm local time (4am GMT; day before 11pm ET, 8pm PT) on the following days:

1. Wednesday, March 9: First match
2. Thursday, March 10: Second match
3. Saturday, March 12: Third match
4. Sunday, March 13: Fourth match
5. Tuesday, March 15: Fifth match

The matches will be played under Chinese rules with a *komi* of 7.5 (the compensation points the player who goes second receives at the end of the match). Each player will receive two hours per match with three lots of 60-second *byoyomi* (countdown periods after they have finished their allotted time).<sup>1</sup> Each match is expected to take around 4-5 hours.

The tournament will be livestreamed on [DeepMind's YouTube channel](#) as well as broadcast on TV throughout Asia through Korea's Baduk TV, as well as in China, Japan, and elsewhere.

Match commentators will include [Michael Redmond](#), the only professional Western Go player to achieve 9 dan status with 500 professional wins under his belt. Redmond will commentate in English, and Yoo Changhyuk professional 9 dan, Kim Sungryong professional 9 dan, Song Taegon professional 9 dan, and Lee Hyunwook professional 8 dan will commentate in Korean alternately.

Demis Hassabis, CEO and co-founder, Google DeepMind, said: *“Go is the most profound game that mankind has ever devised. The elegantly simple rules lead to beautiful complexity. Go is a game primarily about intuition and feel rather than brute calculation which is what makes it so hard for computers to play well. We are honoured and excited to be playing this challenge match against Lee Sedol, a true legend of the game, and whether we win or lose, we hope that the match will inspire new interest in Go from around the world.”*

Park Chimoon, Vice Chairman, KBA, said:

*“The whole world is interested in this event as this is the first stage where humans and computers are competing in intelligence. I am proud that this historical stage is baduk (Go). I hope Lee Sedol 9 dan will win this time in order to prove humans’ remarkable intelligence and preserve the mysteries of baduk.”*

Lee Sedol, said:

*“This is the first time a computer has challenged a human pro to an even game, and I am privileged to be the one to play it. Regardless of the result, it will be a meaningful event in baduk (Go) history. I heard Google DeepMind’s AI is surprisingly strong and getting stronger, but I am confident that I can win, at least this time.”*

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### **About Google Inc.**

Larry Page and Sergey Brin founded Google in September 1998. Since then, the company has grown to more than 50,000 employees worldwide, with a wide range of popular products and platforms like Search, Maps, Ads, Gmail, Android, Chrome, and YouTube.

### **About Google DeepMind**

DeepMind was founded in London in 2010 by Demis Hassabis, Shane Legg and Mustafa Suleyman. The mission of DeepMind is to solve intelligence and use it to make the world a better place. DeepMind was supported by some of the most iconic tech entrepreneurs and investors of the past decade, prior to being acquired by Google in early 2014 in their largest European acquisition to date.

### **About KBA (Korea Baduk Association)**

The Korea Baduk Association (KBA) was founded in November 1945 with the mission of promoting baduk and supporting elite players. The pioneer of Korean baduk, Master Cho Namchul, was the leading founder. Today, the KBA has 317 professional players including 55 female pros, and organizes 7 international and 18 domestic tournaments for professional players, plus about 400 amateur events each year. Also, the KBA’s largest events, the Korea Baduk League and Korea Women’s Baduk League, have 10 and 8 teams each, all sponsored by corporations or regional governments. All games are broadcast live on Baduk TV, enriching baduk fans’ experience.

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<sup>1</sup> At the beginning of the match each player has 2 hours to play all of their moves, for each move they can take as little or as much time as they wish. When either player uses up their 2 hours they go into this byoyomi or "countdown time extension". Players rarely go into byoyomi at the same time.

In practice it works like this:

If you place your stone within 60 seconds you retain your 3 lots of 60 seconds

If you move in >60 seconds but <119 seconds you lose one byoyomi so you now have 2 lots of byoyomi

If you move in >120 seconds you lose two byoyomi so you would only have 1 lot so byoyomi left... and so on

Once you only have 1 lot of byoyomi left you can be out of the game if the timer goes over 60 seconds.

## Notes to editors

During the tournament, press conferences will be held at the following times:

- 10am Korea time on Tuesday 8th March: Opening press conference
- 15 mins after each match day (Around 5.30/6pm Korea time - timing may change depending on when the match finishes)
- [Time TBC] Closing press conference

The press conferences will not be livestreamed. However, Demis will share remarks on his Twitter account: <https://twitter.com/demishassabis>

## Quotes from Go professionals and commentators ahead of the match:

**Ke Jie 9p<sup>2</sup>** *"I used to think AI can never beat human, at least it won't happen within 10 years. but this is unbelievable... I think Lee Sedol will win the match in March. I really want to play AlphaGo, not just me, all the active Chinese pros want to play it."* [Source](#).

**Gu Li 9p** *"Without any doubt, this has been an astonishing development, I believe it will defeat human in the future."* [Source](#)

**Chou Chun-hsun 9p** *"I have always thought that Go should not be regarded as sport, but culture and art. Being defeated by the computer, we should probably return Go to where it belongs and bring it to another level. For example, the objective of learning Go is not only to win tournaments, but to explore the benefits and joy it gives us."* [Source](#).

**Shi Yue 9p** *"It will probably be a good opportunity for us when the program reaches the level of a top player and is accessible by the general public. I would definitely play with it every day using different tactics in order to understand more about Go. In fact, AlphaGo is a tool invented by people, and a tool has to be used for us to judge its advantages and drawbacks."* [Source](#).

Rémi Coulom, Developer of Crazy Stone (a leading Go computer programme):

[Commenting on how long it will be when a machine will win without a handicap] *"I think maybe ten years," he says. "But I do not like to make predictions."* [Source](#)

*"This is a really big result, it's huge"* [Source](#)

## Li Ting 1p - Vice president of the European Go Federation

*"A lot of people will be shocked because for many years people have tried to sell the notion of Go as a game in which computers can never beat humans. As a promoter of Go, I think it is a good opportunity for more people to learn about this game, especially in Europe and America. Many people must have read about Go through recent news and are interested in it, furthermore, their interest may remain. We must discover more of the cultural and fun side of Go, so more people may appreciate the joy brought by Go. Our goal is to make Go the mind game that bewitches the world."* Source

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<sup>2</sup> 9p means a 9-dan player - the highest level a professional player can attain

## **Comments from Koreans (source: KBA and Google Korea)**

### **Jeong Jaeseung (Professor of Bio and Brain Engineering at Korea Advanced Institute of Science and Technology)**

"The Lee Sedol-AlphaGo Match is not just about AI challenging human in a more complex game, Go, after beating human at chess. Unlike the past when AI calculated the probabilities and patterns for all moves, AI is challenging human with human-like reinforcement learning and strategy derived from deduction. The match, regardless of the result, will become a landmark in the history of AI."

### **Changhyuk Yoo (Professional player 9D, Head Coach of Korean Baduk Team)**

"If AlphaGo's current level is similar to the one it showed during the match with Fan Hui, Lee Sedol will easily beat AlphaGo. However, we are not sure how much progress AlphaGo has made during the six months after the Fan Hui match. I originally expected that it will take long to see AI catch up with humans in Go, but was surprised to see AlphaGo win in the match against Fan Hui."

### **Changho Lee (Professional player 9D)**

"I heard about the match between Lee Sedol and Google DeepMind's AlphaGo through the media. I am surprised that an AI could challenge a human pro on even game. I believe Google DeepMind challenged Lee Sedol because they thought AlphaGo has chance of winning. It will be an interesting match, but I think Lee Sedol will win this time."

### **Dongyoon Kang (Professional player 9D, Winner of the 20<sup>th</sup> LG Cup)**

"I went through the game record of the match between AlphaGo and Fan Hui, and AlphaGo plays really well. It makes huge mistakes where standard procedures are necessary. I do not understand how computers can make such mistakes. There are some unnecessary steps. I think AlphaGo will ultimately lose after winning and losing some of the five matches. However, some people say that Lee Sedol earned USD 1 million prize money for free, but I do not agree. I would have feared the result. Some say that AlphaGo's true level was not revealed, as Fan Hui was not a very strong competitor, but I think AlphaGo showed enough how strong it is in Go during the match with Fan Hui."

### **Janghoon Kim (Korean Singer / Honorary Ambassador of KBA)**

"I think Lee Sedol will win this match. However, I believe some day, computers will beat human in Go. However, the important thing is to make people around the world interested in Go by connecting the analogue game of Go with IT, not who wins the match. It is a pleasure to have Lee Sedol of Korea play the leading role in the movement. I am curious about Lee Sedol's thoughts about the match with the computer."