Annotated and Image Bibliography

Primary Sources:

"Behind Deep Blue." Amazon. Amazon, n.d. Web. 3 Feb. 2013. <http://www.amazon.com/Hsu-Feng-Hsiungs-Behind-Deep-Blue/dp/B008W0DYWQ&docid=vd_Q-dugkF4n2M&itg=1&imgurl=http://ecx.images-amazon.com/images/I/515SQ7gN5NL._SL500_SS500_.jpg&w=500&h=500&ei=hbYOUcGnFYz00QGAp4CQDA&zoom=1&ved=1t:3588,r:14,s:0,i:123&iact=rc&dur=1536&sig=108495353558782364245&page=1&tbnh=173&tbnw=173&start=0&ndsp=24&tx=95&ty=83>.

This photograph shows Feng-Hsiung Hsu's book, Behind Deep Blue.

Campbell, Murray. Interview by Wired News. 11 May 2007.

In this interview, Murray Campbell discussed the future of supercomputing, the Deep Blue Rematch, as well as the computer Deep Blue. Specific comments were provided explaining why the match captured the public imagination to a great degree.

Campbell, Murray, Joseph Hoane Jr., and Feng-hsiung Hsu. "Deep Blue." Artificial Intelligence 134 (2002): n. pag. Print.

This journal by the IBM team officially outlines the entire Deep Blue project. It includes, the introduction, system overview, search processes and evaluation functions.

"Chess Match Between Garry Kasparov and Deep Thought, New York City." Profimedia. Profimedia, n.d. Web. 3 Feb. 2013. <http://www.profimedia.si/picture/chess-match-between-garry-kasparov-and-deep/0037919203/>.

This photograph displays a scene during a game of Deep Blue vs. Kasparov.

ChessQuotes.com. ChessQuotes.com, 2009. Web. 2 Feb. 2013. <http://www.chessquotes.com/>.

This website contains original quotes by Kasparov describing chess, himself, computers, and also the Deep Blue vs. Kasparov matches.

Deep Blue and IBM team. Business Insider. Business Insider, 11 May 2012. Web. 3 Feb. 2013. <http://www.businessinsider.com/15-years-ago-today-ibm-deep-blue-kasparov-2012-5?op=1>.

Photograph of the IBM Deep Blue team. It displays all members that were part of Deep Blue's development.

"Deep Blue and Kasparov." Varsity Blogs. Varsity, 2011. Web. 2 Feb. 2013.

<http://blogs.varsity.co.uk/varsitech/the-humane-machine>.

This photograph displays a scene during a game of Deep Blue vs. Kasparov.

"Deep Blue." Wikipedia. Wikipedia, n.d. Web. 2 Feb. 2013. <http://en.wikipedia.org/wiki/Deep_Blue_(chess_computer)>.

This is a photograph of IBM's Deep Blue supercomputer (outside).

"Deep Blue Vs. Kasparov, Game 6." Forbes. Forbes, 22 Aug. 2011. Web. 3 Feb. 2013. <http://www.forbes.com/sites/davidewalt/2011/08/22/kasparov-deep-blue-game-6-1997/>.

This photograph shows Kasparov after he resigns the sixth game against Deep Blue (Rematch).

Eckert, J. Presper. Interview by Alexander Randall. 23 Feb. 2006.

Interview by Randall to Eckert on ENIAC the first electronic computer, its functions, plans with ENIAC, before ENIAC, and beyond ENIAC.

"Feng-hsiung Hsu." Chess Programming Wiki. Wikispaces, n.d. Web. 3 Feb. 2013. <http://chessprogramming.wikispaces.com/Feng-hsiung+Hsu>.

This photograph shows Fend-hsiung Hsu, an important figure in the creation of Deep Thought and Deep Blue.

Garry Kasparov. Garri Kasparov. Mika Kaakinen, 2012. Web. 2 Feb. 2013. <http://www.kolumbus.fi/mika.kaakinen/kasparov_englanti.html>.

This photograph displays Garry Kasparov (former world chess champion 1985-2000).

Garry Kasparov. OPTIMUM PERFORMANCE TECHNOLOGIES. Blogger, 20 Jan. 2008. Web. 3 Feb. 2013. <http://optimumperformancetechnologies.blogspot.com/2008/01/what-i-had-learned-from-gary-kasparov.html>.

This photograph displays Garry Kasparov (former world chess champion 1985-2000).

Garry Kasparov. The New York Times. The New York Times Company, n.d. Web. 2 Feb. 2013. <http://topics.nytimes.com/topics/reference/timestopics/people/k/garry_kasparov/index.html>.

This photograph displays Garry Kasparov.

Heisman, Dan. Personal interview. 12 Dec. 2012.

Heisman gives his role and opinions during the match as someone that has actually worked at the Deep Blue versus Kasparov matches. Focuses upon significance of event and Kasparov's claim.

Hsu, Feng-Hsiung. Behind Deep Blue: Building the Computer That Defeated the World Chess Champion. Princeton: Princeton University Press, 2002. Print.

A book by principal designer of Deep Blue reveals a complete story. It describes many events such as time before Deep Blue, Hsu's journey and role, how the Deep Blue idea came, and Kasparov's controversial claim.

IBM'S DEEP BLUE CHESS GRANDMASTER CHIPS (1999). Print.

A journal written by Feng-hsiung Hsu describes the intricacies of the Deep Blue project. He details how a chess machine works and evaluation and search functions of Deep Blue supplemented with captioned diagrams.

"IBM's Deep Blue." You Could Learn a Lot from Deep Blue. ADRIAN T. DAYTON, 2013. Web. 2 Feb. 2013. <http://adriandayton.com/2010/04/you-could-learn-a-lot-from-deep-blue/>.

This is a photograph of IBM's Deep Blue supercomputer (outside).

IBM."Garry Kasparov playing chess with IBM's Deep Blue." TheTech. The Tech Museum of Innovation, n.d. Web. 2 Feb. 2013. <http://www.thetech.org/exhibits/online/robotics/universal/breakout_p11_ibm.html>.

This is a photograph of Kasparov thinking in a game against Deep Blue.

iPhone 5. The Washington Post. The Washington Post, 12 Sept. 2012. Web. 3 Feb. 2013. <http://articles.washingtonpost.com/2012-09-12/business/35495562_1_ipod-touch-ipod-line-iphone>.

This photograph shows an iPhone 5 (smartphone), a product of modern-day computing.

Jayanti, Vikram, dir. *Game Over: Kasparov and the Machine*. Prod. Hal Vogel. Narr. Marc Ghannoum. Perf. Joel Benjamin et al. THINKFilm, 2003. Film.

Vikram Jayanti offers a wonderful overview of the Kasparov-Deep Blue match focusing on the games of the Rematch as well as Kasparov's reactions to the results of the games (interviews in documentary). This documentary showed an overview of the entire Rematch and the important accusation that Kasparov claimed the IBM Team to be cheating.

Kasparov, Garry. How Life Imitates Chess. New York: Bloomsbury USA, 2007. Print.

Kasparov's book is in some sense an autobiography. Kasparov explains lessons he learned through his career such as how to think, make, decisions, prepare strategies, and anticipate. It also discusses the human psyche using the underlining principles of memory, intuition, and imagination. There are sections of the book dedicated to the Deep Blue versus Kasparov match.

Kasparov vs. Deep Blue. Forbes. Forbes, 3 May 2011. Web. 3 Feb. 2013. <http://www.forbes.com/sites/davidewalt/2011/05/03/kasparov-vs-deep-blue/>.

Photograph of Kasparov thinking when playing against IBM Deep Blue.

"Murray Campbell, Feng-hsiung Hsu, Thomas Anantharaman, Mike Browne and Andreas Nowatzyk, after winning the Fredkin Intermediate Prize for Deep Thought's Grandmaster-level performance." Chess Programming Wiki. Wikispaces, n.d. Web. 3 Feb. 2013. <http://chessprogramming.wikispaces.com/Andreas+Nowatzyk>.

Photograph of the IBM Deep Blue team. It displays all members that were part of Deep Blue's development.

"Murray Campbell." Wired. Wired, 17 May 2007. Web. 3 Feb. 2013. <http://www.wired.com/science/discoveries/news/2007/05/murraycampbell_qa>.

Photograph of Murray Campbell, a computer scientist that was part of the Deep Blue development team.

"The Brain's Last Stand." Mind and Consciousness. Bogger, n.d. Web. 3 Feb. 2013. <http://faculty.ycp.edu/~dweiss/phl221_intro/mind.htm>.

A photograph of an issue of Newsweek, "The Brain's Last Stand". Focusing on the Rematch of Deep Blue vs. Kasparov.

"The Deep Blue team." Icons of Progress. IBM, n.d. Web. 3 Feb. 2013 <http://www-03.ibm.com/ibm/history/ibm100/us/en/icons/deepblue/team/>.
Photograph of the IBM Deep Blue team. It displays all members that were part of Deep Blue's development.

Secondary Sources:

AI Brain. I, ROBOT – CAN ARTIFICIAL INTELLIGENCE PLAY A ROLE IN BUSINESS APPLICATIONS? IFS, n.d. Web. 2 Feb. 2013. <http://blogs.ifsworld.com/2012/11/i-robot-can-artificial-intelligence-play-a-role-in-business-applications/>.

This image portrays an artificial brain, an appropriate representation of artificial intelligence and the human brain.

Albert Einstein. Einstein and the Pole Shift. WIkidot, n.d. Web. 3 Feb. 2013. <http://www.2012hoax.org/einstein>.

This is a photograph of Albert Einstein, a German theoretical physicist.

Antonoff, Michael. "Curtains for Kasparov?" Popular Science Mar. 1996: 42+. Gale Power Search. Web. 19 Sep. 2012.

This cover story discusses Kasparov's actions and motives during the match. Antonoff claimed, "Kasparov is being conservative" during multiple matches which in his opinion this motive affected Kasparov's final score.

"Artificial.intelligence." Wikipedia. Wikipedia, n.d. Web. 3 Feb. 2013. <http://en.wikipedia.org/wiki/File:Artificial.intelligence.jpg>.

This illustration is a representation of artificial intelligence: a computer in the human brain.

"Artificial intelligence." World Book Student. World Book ,2012. Web.19 September. 2012.

This encyclopedia entry defines key vocabulary relating to artificial intelligence. It describes concepts such as knowledge representation, reasoning, planning, problem, solving, and learning.

Aung, Lawrence. "Deep Blue: The History and Engineering behind Computer Chess." *Illumin* 15 Nov. 2012: n. pag. Print.

Aung gives a complete overview of the success of Deep Blue. This article discussed the history and engineering of computer chess directed towards Deep Blue. This article portrays the story of early programmers in the mid-20th century to modern day.

Bringsjord, Selmer. "Chess Is Too Easy." Technology Review. March/April 1998: 23-28. SIRS Issues Researcher. Web. 20 Sep 2012.

This article describes new test of artificial intelligence: asking a computer to write a story. It also compares a concept of "Strong AI" vs. "Weak AI" and considers the computer's potential for mindedness.

"But can it play Scattergories?" Friday Fun Facts. Friday Fun Facts, n.d. Web. 3 Feb. 2013. <http://www.fridayfunfacts.com/2011/04/01/fool-me-once-10-great-hoaxes-that-snookered-the-world/>.

This photograph displays a replica of the Turk, a hoax chess computer.

"Cloud Computing." TheNewsBlog. TheNewsBlog, n.d. Web. 3 Feb. 2013.

<http://blogs.thenews.com.pk/blogs/2012/07/cloud-computing-nothing-less-than-magic/>.

This diagram illustrates components of cloud computing into subsections around cloud computing.

Computer History Museum. "Timeline of Computer History." Computer History Museum. Computer History Museum, 2006. Web. 2 Feb. 2013. <http://www.computerhistory.org/timeline/?category=cmptr>.

This website of the Computer History Museum displays a timeline of important events in the history of computers from the very beginning to 1980s. It also describes each event and its significance.

"David Levy at Pamplona 2009 (WCCC – CO – ACGC)." Wikipedia. Wikipedia, 2009. Web. 3 Feb. 2013. <http://en.wikipedia.org/wiki/David_Levy_(chess_player)>.

A photograph of David Levy known for his claim that no computer could beat him from in ten years (1968-1978).

David Levy. ChessBase. ChessBase, 21 Dec. 2003. Web. 3 Feb. 2013. <http://www.chessbase.com/newsdetail.asp?newsid=1372>.

A photograph of David Levy known for his claim that no computer could beat him from in ten years (1968-1978).

"Deep Blue." IBM Chess Web Page. 25 Apr 1997: n.p. SIRS Issues Researcher. Web. 19 Sep 2012.

This article overviews the advancements in the supercomputer Deep Blue between the two matches against Kasparov. The major topics were origins of Deep Blue, the current version, and improvements.

Dennett, Daniel C. "Higher games: on the 10th anniversary of Deep Blue's triumph over Garry Kasparov in chess, a prominent philosopher of mind asks, what did the match mean?" Technology Review [Cambridge, Mass.] Sept.-Oct. 2007: 98+. Gale Power Search. Web. 19 Sep. 2012.

This article compares Deep Blue to Kasparov's brain and analyzes their different characteristics. Then it portrays the philosophical ideas behind the differences between a brain and a computer.

"Did you know that: The first computer earns in 1947." Tech for Life. Blogger, n.d. Web. 3 Feb. 2013. <http://scitechblognews.blogspot.com/2011/03/did-you-know-that-first-computer-earns.html>.

Photograph of first electronic computer, ENIAC along with a woman sitting by.

"Dilbert on Turing." ChessBase. ChessBase, n.d. Web. 3 Feb. 2013. <http://www.chessbase.com/newsdetail.asp?newsid=7033>.

This illustration is a comic, which displays the idea of the Turing test through an interesting story.

"Garry Kasparov focuses intensely on his position in Game 6 of the Deep Blue vs Kasparov match in Philadelphia, Pennsylvania 1996." Computer History. Computer History, n.d. Web. 3 Feb. 2013. <http://www.computerhistory.org/chess/full_record.php?iid=stl-430b9bbd3f6f2&mainImage=1&homepage=1#>.

Photograph of Kasparov focusing intensely on his position in Game 6 of the Deep Blue vs. Kasparov 1996 match.

Grinko, Volodymyr. "Human Head.figure the concept of artificial intelligence." 123RF. 123RF, n.d. Web. 2 Feb. 2013. <http://www.123rf.com/photo_11763980_human-head-figure-the-concept-of-artificial-intelligence.html>.

This illustration represents a virtual human head and concepts of artificial intelligence.

IBM. "A Snapshot of IBM Milestones." Gizmodo. Gizmodo, 16 June 2011. Web. 2 Feb. 2013. <http://gizmodo.com/5812624/qa-the-ibm-you-never-knew-about>.

This image displays a timeline of milestones of IBM before, including, and after Deep Blue.

IBM's Deep Watson. Vitria. Vitria, n.d. Web. 3 Feb. 2013. <http://blog.vitria.com/bid/67001/IBM-s-Watson-What-Does-Complex-Event-Processing-Mean-For-Customer-Experience Management>.
Photograph of IBM’s Deep Watson, a supercomputer developed after Deep Blue made to play Jeopardy.

Intel. "Figure 1: Moore's law for memory chips and microprocessors plotted on a semi-logarithmic scale, which has the effect of making nonlinear exponential curves appear linear. The uppermost purple curve is the Moore projection based on data up to 1975; note the kink correction around 1980, which shows that the so-called law is only an approximation." Computer Measurement Group. Computer Measurement Group, n.d. Web. 3 Feb. 2013. <http://www.cmg.org/measureit/issues/mit41/m_41_2.html>.

This diagram displays Moore’s law which governs computer process power growth rate: doubles every two years or eighteen months.

"Kasparov vs. Deep Blue: A Contrast in Styles." IBM Chess Web Page. 25 Apr 1997: n.p. SIRS Issues Researcher. Web. 19 Sep 2012.

This article examined the differences between the way Kasparov (humans) and Deep Blue (computers) played chess. This article discussed what are the strengths and weaknesses of humans and computers.

Kotulak, Ronald. "Making Machines Human Is Real Chess Match of AI World." Chicago Tribune (Chicago, IL). Feb. 4 2003: n.p. SIRS Issues Researcher. Web. 21 Sep 2012.

This article goes beyond the turning point of Deep Blue versus Kasparov and details Deep Junior, a new chess computer. With tremendous improvement in technology, the perspective of this article varies from other sources.

Krauthammer, Charles. "Be Afraid. The Meaning of Deep Blue's Victory." Weekly Standard. 26 May 1997: 19-23. SIRS Issues Researcher. Web. 20 Sep 2012.

This article has two contrasting topics: the methods of computers and humans. It also portrays the Turing test and a timeline of computer evolution.

Michio Kaku. Tumblr. Tumblr, n.d. Web. 3 Feb. 2013. <http://www.tumblr.com/tagged/michio%20kaku?language=fr_FR>.

Photograph of theoretical physicist, Michio Kaku.

Neff, Raymond K. "Silver Pellets and Remote Programmers." World & I. Oct. 1999: 184-191. SIRS Issues Researcher. Web. 27 Sep 2012.

Neff describes the Y2K bug on computers and the science behind it (causes, effects, problems). The important concept derived from this article is the application and importance of computers to modern-day society.

Peterson, I. "Computer chess: a masterful lesson." Science News 28 Oct. 1989: 276. Gale Power Search. Web. 20 Sep. 2012.

This article summarizes the events of Kasparov playing against IBM's supercomputers. Peterson mentions important points as to what was learned from those events and also included opinions from IBM's team and Kasparov.

Peterson, Ivars. "The soul of a chess machine; lessons learned from a contest pitting man against computer." Science News 30 Mar. 1996: 200+. Gale Power Search. Web. 20 Sep. 2012.

Peterson offers a wonderful description on what has been learned as a result of the Deep Blue-Kasparov match. This article focused on comparing the computation power of Deep Blue and psychological and intuitional aspects of Kasparov.

Plumer, Brad. "Nate Silver's 'The Signal and the Noise'." The Washington Post 26 Sept. 2012: n. pag. Print.

A newspaper article describing Nate Silver's book, *The Signal and the Noise*. Opinions of Silver on the causes of the result of the Deep Blue vs. Kasparov Rematch are presented.

Script Connector®, Corporation. SCRIPT CONNECTOR® Corporation. Script Connector, 2012. Web. 3 Feb. 2013. <http://www.scriptconnector.us/blog/about-us>.

These photographs display sets of supercomputers (outside). Demonstrates the sizes and quality of modern supercomputers.

Sonas, Jeff. "Computer match performance against humans." Chessbase. Chessbase, n.d. Web. 3 Feb. 2013. <http://www.chessbase.com/newsdetail.asp?newsid=1292>.

These images display graphs of strength of chess-playing computers relative to humans in two different ways. One compares the rating growth and another displays the increase of a computer's performance throughout a match against a human.

Stork, David G. "The End of an Era, the Beginning of Another? Hal, Deep Blue..." IBM Chess Web Page. 25 Apr 1997: n.p. SIRS Issues Researcher. Web. 19 Sep 2012.

This article focused on three important concepts of artificial intelligence and Kasparov-Deep Blue, the chess Turing test, achieving AI (in chess), and A New Era (Computer dominance over humans).

Stover, Dawn. "The world's next chess champion?" Popular Science Mar. 1991: 68+. Gale Power Search. Web. 20 Sep. 2012.

Stover describes a brief history of Deep Thought, Deep Blue's predecessor. He goes into detail describing game theory and Deep Thought's processing patterns. This article anticipates the Deep Thought vs. Kasparov event.

The Internet. WEB DESIGN AND PUBLISHING. Blogger, n.d. Web. 3 Feb. 2013. <http://royalmulti.blogspot.com/2012/07/internet-liberating-invention.html>.

An image of a graphic representation of the Internet. This image shows how connected the world is via the Internet.

"The making of Deep Blue." IBM. IBM, n.d. Web. 3 Feb. 2013. <https://researchweb.watson.ibm.com/deepblue/meet/html/d.3.1.html#chiptest>.

This website displays a timeline of events that occurred that were relevant to Deep Blue and a text supplement was provided with it, explaining each event in detail.

The New York Times. "Garry Kasparov." New York Times [New York]: n. pag. Print.

This newspaper article from the New York Times portrays a biography of Kasparov's life describing his early life and also matches against Deep Blue, his accusation, and beyond Deep Blue.

The Turk. The Turk Chess Automaton Hoax. Blogger, 23 Dec. 2007. Web. 3 Feb. 2013. <http://bibliodyssey.blogspot.com/2007/12/turk-chess-automaton-hoax.html>.

This photograph displays a replica of the Turk, a hoax chess computer.

"Terminator." Fanpop. Fanpop, n.d. Web. 3 Feb. 2013. <http://www.fanpop.com/clubs/terminator/images/297644/title/terminator-photo>.

This photograph displays a Terminator, a science fiction concept from the movie *The Terminator.* Displays a possible concept of singularity and artificial intelligence.

Thomson, Derek. "Artificial Intelligence." Toronto Star (Toronto, Canada). 26 Apr 2001: J1+. SIRS Issues Researcher. Web. 21 Sep 2012.

This article depicted artificial intelligence abstractly. Discusses ideas and theories of AI using scientific comparisons. It included predictions in the future and goals for development of AI.

"Turk reconstruction." Wikipedia. Wikipedia, n.d. Web. 3 Feb. 2013. <http://en.wikipedia.org/wiki/The_Turk>.

This photograph displays a replica of the Turk, a hoax chess computer.

University of Cambridge. "What are Quantum Computers?" Qubit.org. University of Cambridge, n.d. Web. 3 Feb. 2013.

This poster or illustration describes quantum computing including how it works, qubits, how to build quantum computers, and most promising technologies of quantum computing.

Wright, Robert. "Can Machines Think?." Time. 25 Mar 1996: 50-58. SIRS Issues Researcher. Web. 20 Sep 2012.

Wright's article summarizes the debate on artificial intelligence with perspectives of scientists and philosophers. Different opinions of experts in the AI field are presented. Garry Kasparov also tells what he thinks of AI in his match against Deep Blue.