Annotated Bibliography

Michael Gao, Alexander Zhang

Senior Group Website

Student-Composed Word Count: 1198

Process Paper Word Count: 492

Multimedia Time: 2:31

Primary Sources

Websites

"Alan Turing OBE, PhD, FRS (1912-1954)." *The Old Shirburnian Society*, 1 Sept. 2016, oldshirburnian.org.uk/alan-turing/. Accessed 7 Jan. 2023.

This website included information about Turing's education in later years, specifically at Sherborne School in Dorset. In addition, it provided valuable information about Turing's intellectual and emotional standing at the school.

"Amt-A-1." *The Turing Digital Archive*, The Turing Digital Archive, https://turingarchive.kings.cam.ac.uk/biographical-and-personal-documents-amta/amt-a-1. Accessed 9 Jan. 2023.

This website showed newspaper cuttings, printed obituaries, and material relating to Alan Turing and his tributes. These documents showed Turing's personal life and reserved personality as well as his major contributions at the time, helping illustrate a more cohesive and accurate narrative.

"Amt-A-5." *The Turing Digital Archive*, The Turing Digital Archive, https://turingarchive.kings.cam.ac.uk/biographical-and-personal-documents-amta/amt-a-5. Accessed 16 Jan. 2023.

This website shows the last will and testament of Alan Turing, specifying what is to be done with his will and who will be carrying it out. This document provides insight into Turing and his devotion to his profession and family, as the beneficiaries highlight.

Newspaper/Articles

"Alan Turing's Trial Charges and Sentences, 31 March 1952." Alan Turing: The Enigma, Andrew Hodges, https://www.turing.org.uk/sources/sentence.html. Accessed 12 Jan. 2023.

This document shows Alan Turing's trial with his charges and sentences pertaining to the official record against him and Arnold Murray. Every charge can be seen as plead guilty along with its corresponding accusation.

"Amt-A-32." *The Turing Digital Archive*, The Turing Digital Archive, https://turingarchive.kings.cam.ac.uk/biographical-and-personal-documents-amta/amt-a-32. Accessed 9 Jan. 2023.

This website shows the newspaper Surrey Comet on November 28, 1959, including an article on Turing's genius and his sudden death. The newspaper paints a defined perspective of Turing before his death therefore emphasizing the abruptness, which introduces the perspective of Turing's sudden death as surprising.

Government of the United Kingdom. Criminal Law Amendment Bill 1921. UK Parliament, https://api.parliament.uk/historic-hansard/lords/1921/aug/15/commons-amendment-2. Accessed 18 Dec. 2022.

The Criminal Law Amendment Bill 1921 was an addition to the previous Criminal Law Amendment Bill 1885, and would have made lesbianism into a criminal offence. However, it did not pass due to the possibility that its passage would cause more women to explore homosexuality. This legislation provided insight into the societal standards at the time and the rampant homophobia within the national government.

Turing, A. M. “Computing Machinery and Intelligence.” *Mind*, vol. LIX, no. 236, 1950, pp. 433–60, https://doi.org/10.1093/mind/lix.236.433. Accessed 8 Jan. 2023.

This was one of Turing’s most impactful works, as many of the ideas he expressed in the article formed the basis for early artificial intelligence–specifically machine learning. This research laid the foundation for future efforts to simulate human intelligence.

Turing, A. M. Letter to Isobel Morcom. 15 Feb. 1930. Accessed 27 Dec. 2022.

A heartbreaking letter, written by Turing to Morcom’s mother after his passing, illustrated the profound impact Morcom had on Turing, and how strong their relationship was before his tragic death.

Turing, A. M. “On Computable Numbers, with an Application to the Entscheidungsproblem.” *Proceedings of the London Mathematical Society*, vol. s2-42, no. 1, 1937, pp. 230–65, https://doi.org/10.1112/plms/s2-42.1.230. Accessed 18 Dec. 2022.

One of Turing’s first works, his research on the *Entscheidungsproblem*, or “decision problem”, formed the basis of his studies moving forward. The development of the “Turing test” was an idea that continued to inspire future research efforts in the field.

Turing, A. M. “Systems of Logic Based on Ordinals.” *Proceedings of the London Mathematical Society*, vol. s2-45, no. 1, 1939, https://doi.org/10.1112/plms/s2-45.1.161. Accessed 14 Jan. 2023.

This was Turing’s graduate dissertation at Princeton. It greatly contributed to his reputation among the mathematics and computer science fields, and earned significant recognition among other researchers.

Turing, A. M. *The Essential Turing*. Edited by Jack Copeland, Greenwood Press, 2004. Accessed 27 Dec. 2022.

This book provided further details into Alan Turing's work at King's College, Cambridge and the public's view surrounding it. It also contained valuable quotes that were used on the "Educatum" page.

Digital Visuals

"Alan Turing, Aged 15, at Westcott House, Sherborne School." BBC, BBC, https://www.bbc.co.uk/teach/alan-turing-creator-of-modern-computing/zhwp7nb. Accessed 15 Jan. 2023.

The image depicts Turing in primary school. It appears on the page "Initium" along with other pictures of Turing in his adolescence.

"Alan Turing OBE, PhD, FRS (1912-1954)." The Old Shirburnian Society, The Old Shirburnian Society, https://oldshirburnian.org.uk/alan-turing/. Accessed 15 Jan. 2023.

Image depicts Turing enrolled at Sherborne School. It appears on the page "Initium" alongside other images of Turing and his friends.

"Alan Turing's Class Photo at King's College, Cambridge in 1931." King's College, Cambridge Will Install Abstract Memorial to Alan Turing, Smithsonian Magazine, https://www.smithsonianmag.com/smart-news/kings-college-cambridge-will-install-abstract-memorial-to-alan-turing-180980574/. Accessed 15 Jan. 2023.

Image depicts Turing's class photo at King's College in 1931 showing Turing enrolled in higher education. The image appears on the page "Educatum" alongside other images of Turing's achievements in college.

"Alan Turing: Turing Machine 1936." Media+Art+Innovation, Media+Art+Innovation, https://mediartinnovation.com/2014/05/26/alan-turing-turing-machine-1936/. Accessed 15 Jan. 2023.

Figure depicts the Turing Machine in 1936 and is used to show some of Turing's most important research during college. The image appears on the page "Educatum" with other images of Turing and his college achievements.

American Institute of Physics. "Alan Turing." Physics Today, 2018, 10.1063/pt.6.6.20180623a. Accessed 14 Jan. 2023.

Picture of Turing at the time. The image appears on the page "Legacy" along with another picture of Turing above.

Armstrong, April C. Alan Turing's Princeton University File Available Online, Princeton University, 26 Dec. 2014, https://blogs.princeton.edu/mudd/2014/11/alan-turings-princeton-university-file-available-online/. Accessed 15 Jan. 2023.

Image depicts the paperwork and letters regarding Turing and the Proctor Fellowship, which is used to emphasize Turing's high achievements at graduate school. The image appears on the page "Educatum" along with other images of Turing and his achievements.

"Barges at Canning Dock, Liverpool, England." *Wikimedia Commons*, Wikimedia Commons, 1 Jan. 2016, https://en.wikipedia.org/wiki/File:Barges_at_Canning_Dock,_Liverpool,_England_c.1910.jpg. Accessed 22 Jan. 2023.

The image depicts barges at Canning Dock, Liverpool, and is used to illustrate Northern England in 1912. The image appears on the "Context" page.

Bennett, Adam. "Young Alan Turing Was Told by His Science Teacher He Would Never Amount to Anything with His 'Vague Ideas', Report Card Reveals ." The Telegraph, The Telegraph, https://www.telegraph.co.uk/news/2017/10/23/young-alan-turing-told-science-teacher-would-never-amount-anything/. Accessed 15 Jan. 2023.

Image depicts Turing and his friends all holding different items, helping illustrate Turing's highly productive habits. The image appears on the page "Initium" along with other pictures of Turing and his friends.

"Christopher Morcom, C.1926-1927." The Sherborne Formula: the Making of Alan Turing, The Old Shirburnian Society, https://oldshirburnian.org.uk/the-sherborne-formula-the-making-of-alan-turing/. Accessed 15 Jan. 2023.

Image depicts Christopher Morcom, one of Turing's best friends, enrolled at Sherborne School. The image appears on the page "Initium" alongside other images of Turing and his friends.

"Dai Edwards and Tommy Thomas Using the Manchester Mark 1 Computer." The University of Manchester, The University of Manchester, https://www.cs.manchester.ac.uk/about/history-and-heritage/. Accessed 14 Jan. 2023.

Photograph depicts researchers using the Manchester Mark I computer, a computer Turing did significant work on. Image appears on the "Factum" page alongside other outstanding achievements of Turing.

"ENIAC." Computer History Museum, Computer History Museum, https://www.computerhistory.org/revolution/birth-of-the-computer/4/78. Accessed 14 Jan. 2023.

Photograph of ENIAC, a computer that Turing's detailed design of a stored-program computer contributed to. The image appears on the page "Factum" alongside other outstanding achievements Turing accomplished.

Government of the United Kingdom. Official Secrets Act 1939. The National Archives, https://www.legislation.gov.uk/ukpga/Geo6/2-3/121/data.pdf. Accessed 14 Jan. 2023.

Text depicts the Official Secrets Act (1939), the document Turing was forced to sign, pledging not to reveal information related to his work at Bletchley. The image appears on the page "Profectus" alongside other Turing work at Bletchley.

Kilburn, Tom. "Manchester Mark I." Britannica, Britannica, https://www.britannica.com/technology/stored-program-concept. Accessed 15 Jan. 2023.

Image shows the Manchester Mark I, emphasizing the importance of Turing's research in college, as the computer was heavily based on his ideas. Image appears on the "Educatum" page alongside other achievements Turing worked on in graduate school.

"King's College Chapel." King's College Chapel: an Architectural Masterpiece and the Man Who Told Its Story, University of Cambridge. Accessed 15 Jan. 2023.

Drawing depicts King's College Chapel, London, the university Turing did his undergraduate studies at. The depiction appears on the page "Initium" to transition from secondary school to higher education.

Trinity College Cambridge. “Papers of Ludwig Wittgenstein (1889-1951), Philosopher.” Trinity College Cambridge, www.trin.cam.ac.uk/library/wren-digital-library/modern-manuscripts/wittgenstein/. Accessed 14 Jan. 2023.

A photograph of Ludwig Wittgenstein, the author of *Tractus Logico-Philosophicus* as mentioned above. The image appears on the page “Incrementum” alongside a picture of *Tractus Logico-Philosophicus.*

Turing, A. M. *Ferranti Mark I Programming Manual*. Vol. 1, Manchester University. Accessed 14 Jan. 2023.

The document is the *Ferranti Mark I Programming Manual* by Alan Turing, used to emphasize his role in the development of the Manchester Mark I computer. The image appears on the page “Factum” alongside the Manchester Mark I computer.

Turing, A. M. “I.—COMPUTING MACHINERY and INTELLIGENCE.” Internet Archive, Mind, 1950, archive.org/details/MIND--COMPUTING-MACHINERY-AND-INTELLIGENCE. Accessed 16 Jan. 2023.

The text depicts *Mind* by Alan Turing, the work in which Turing disagreed with Wittgenstein. The image appears on the page “Incrementum” alongside a picture of Alan Turing, the author.

Wikipedia Contributors. “Alan Turing.” Wikipedia, Wikimedia Foundation, 23 Mar. 2019, en.wikipedia.org/wiki/Alan_Turing. Accessed 14 Jan. 2023.

Photograph of Alan Turing, author of *Mind* as mentioned above. The image appears on the page “Incrementum” alongside *Mind*, one of Turing’s works.

Wikipedia Contributors. “Bombe.” Wikipedia, Wikimedia Foundation, 19 May 2019, en.wikipedia.org/wiki/Bombe. Accessed 14 Jan. 2023.

Picture of the Bombe, showing one of the most important inventions Turing created at Bletchley. The image appears on the page “Profectus” alongside other work Turing completed at Bletchley.

Wikipedia Contributors. “Glossary of Cryptographic Keys.” Wikipedia, 8 Jan. 2023, en.wikipedia.org/wiki/Glossary_of_cryptographic_keys. Accessed 14 Jan. 2023.

Image depicts a key list for the Enigma Code, part of Turing’s work at Bletchley. The list appears on the page “Profectus” alongside other work Turing did at Bletchley.

Wikipedia Contributors. “Jerry Roberts.” Wikipedia, 23 Dec. 2022, en.wikipedia.org/wiki/Jerry_Roberts. Accessed 14 Jan. 2023.

Picture of Jerry Roberts, a fellow linguist and codebreaker at Bletchley Park who recognized Turing’s work. The image appears on the page “Profectus” alongside other work Turing did at Bletchley.

Wikipedia Contributors. “Tractatus Logico-Philosophicus.” Wikipedia, Wikimedia Foundation, 12 Apr. 2019, en.wikipedia.org/wiki/Tractatus_Logico-Philosophicus. Accessed 14 Jan. 2023.

Image depicts *Tractatus Logico-Philosophicus* written by Ludwig Wittgenstein, which shows Wittgenstein’s written argument. The image appears on the “Incrementum " page alongside other ideas Turing challenged.

Multimedia

"Real 'Imitation Game' Code-Breaker Olive Bailey Describes Alan Turing." *YouTube*, YouTube, 14 Jan. 2015, https://www.youtube.com/watch?v=oECwnlSMpO0. Accessed 23 Jan. 2023.

Clips of a video interview with Olive Bailey, a WWII British Codebreaker speaking on Alan Turing. Video appears on the page "Home" to act as a hook for viewers, painting a theme for the story ahead.

Secondary Sources

Websites

Brian, Randell. "Amt-A-3." *The Turing Digital Archive*, The Turing Digital Archive, May 1972, https://turingarchive.kings.cam.ac.uk/biographical-and-personal-documents-amta/amt-a-3. Accessed 20 Dec. 2022.

The website shows pictures of "On Alan Turing and the Origins of Digital Computers" by B. Randell. This paper investigates the impact and significance of Alan Turing on the origin of modern computers, providing valuable information into his specific role and impact regarding our modern digital age.

Clark, Liat. "Remembering Alan Turing: From Codebreaking to AI, Turing Made the World What It Is Today." *Wired UK*, 7 June 2017, www.wired.co.uk/article/turing-contributions. Accessed 24 Dec. 2022.

This website provided a deeper focus into Turing's work at Bletchley Park and its impact on the rest of his life. In addition, it connected his experiences with codebreaking to the rest of his research.

Copeland, B. J. “Alan Turing | Biography, Facts, & Education.” *Encyclopædia Britannica*, 23 Jan. 2019, www.britannica.com/biography/Alan-Turing. Accessed 7 Jan. 2023.

This website provided information on Turing’s life after graduating from Sherborne School at King’s College, Cambridge. It discussed his research and work through undergraduate school and the eventual transition to Princeton. In addition, it detailed his death and the tragic circumstances under which Turing passed.

Davies, Caroline. “Enigma Codebreaker Alan Turing Receives Royal Pardon.” *The Guardian*, 24 Dec. 2013, www.theguardian.com/science/2013/dec/24/enigma-codebreaker-alan-turing-royal-pardon. Accessed 24 Dec. 2022.

This website explained Turing’s posthumous royal pardon in 2013, and its significance in his legacy. In addition, it contextualizes this event by explaining the 2009 apology made by then prime minister Gordon Brown.

Peralta, René. “Alan Turing’s Everlasting Contributions to Computing, AI and Cryptography.” *NIST*, June 2022, www.nist.gov/blogs/taking-measure/alan-turings-everlasting-contributions-computing-ai-and-cryptography. Accessed 28 Dec. 2022.

This website further detailed Turing’s life, specifically surrounding his mistreatment and downfall. It provided information on the significance of Turing’s work, while contrasting with the harrowing offense committed by the government against such an influential scientist.

Newspaper/Articles

Bowen, Jonathan P. “The Impact of Alan Turing: Formal Methods and Beyond.” *Engineering Trustworthy Software Systems*, 2019, pp. 202–35, https://doi.org/10.1007/978-3-030-17601-3_5. Accessed 2 Jan. 2023.

This article assisted with research on Turing’s graduate education at Princeton, as well as his Ph.D. dissertation. It mainly focused on his theoretical concepts and ideas regarding mathematics and science.

Randell, Brian. "The colossus." *A History of Computing in the Twentieth Century*. Academic Press, 1980. 47-92. Accessed 8 Jan. 2023.

This article focused on the impact of Turing’s research at NPL’s mathematical division. It included a quote from the superintendent on Turing’s work there.

Books

Cawthorne, Nigel. *Alan Turing*. Arcturus Publishing, 2014. Accessed 8 Jan. 2023.

This book was used to analyze Turing’s early life and childhood, including the schools he studied at and the economic and social background of his parents. In addition, it was used to determine the historical context of Turing’s birth.

Copeland, Jack. *Colossus: The Secrets of Bletchley Park’s Code-Breaking Computers*. Oxford University Press, 2010. Accessed 9 Jan. 2023.

This book introduced and contextualized Turing’s recruitment to Government Code and Cypher School (GC&CS) at Bletchley Park. It also provided details on the existing codebreaking technology. In addition, it detailed Turing’s life after WWII’s conclusion, including his work on the ACE (Automatic Computing Engine) at the National Physical Laboratory (NPL).

Darwin, John. *Unfinished Empire: The Global Expansion of Britain*. Bloomsbury, 2014. Accessed 31 Dec. 2022.

This book provided detailed information on the economic status of the United Kingdom before and after Turing's birth, which helped contextualize Turing's life in the societal background of the time.

Hodges, Andrew. *Alan Turing: The Enigma*. 1983. Princeton University Press, Princeton, New Jersey, 2012. Accessed 9 Jan. 2023.

This book provided insight into Turing's relationships with his teachers and peers, specifically with classmate Christopher Morcom. It explained Morcom's tragic death and the lasting effect it had on Turing's life. It also presented details on Turing's time in Cambridge at the lectures of Ludwig Wittgenstein.

Macrae, Norman. *John von Neumann*. Amer Mathematical Society, 1999. Accessed 9 Jan. 2023.

This book provided information on John von Neumann, a fellow scientist and academic that was inspired by Turing's work. This served as another perspective on Turing's life and career.

Swinton, Jonathan. *Alan Turing's Manchester.* History Press, 2022. Accessed 3 Jan. 2023.

This book served as the transition between Turing's 1946 work on the ACE and his time at the Victoria University of Manchester, including his role as the deputy director of the Computing Machine Laboratory, where he worked on the Manchester Mark 1.

Widgerson, Avi. *Mathematics and Computation*. Princeton University Press, 2019. Accessed 25 Dec. 2022.

This book contextualized Turing's undergraduate work on the *Entscheidungsproblem*. In addition, it provided valuable quotes and other information regarding the significance of his research and findings at the time.

Digital Visuals

Bill & Melinda Gates Foundation. "Bill Gates - Bill & Melinda Gates Foundation." www.gatesfoundation.org, www.gatesfoundation.org/about/leadership/bill-gates. Accessed 14 Jan. 2023.

Picture of Bill Gates, a fellow pioneer in the computer science frontier. Image appears on the page "Legacy" to accompany Gates' quote.

Br, IN Car, et al. "Tesla Logo, Png, Meaning." Carlogos.org, 25 May 2020, www.carlogos.org/car-brands/tesla-logo.html. Accessed 14 Jan. 2023.

Logo of Tesla, one of the companies where Turing's work had a major impact, especially regarding machine learning. The image appears on the page "Legacy" alongside the logos of other companies that Turing has influenced.

Google. "Brand Resource Center | Brand Terms." About.google, about.google/brand-resource-center/logos-list/. Accessed 14 Jan. 2023.

Logo of IBM, one of the companies where Turing's work had a huge impact. The image appears on the page "Legacy" alongside the logos of other companies that Turing has influenced.

IBM. "Logo." Www.ibm.com, www.ibm.com/brand/experience-guides/developer/brand/logo/. Accessed 14 Jan. 2023.

Logo of IBM, one of the companies where Turing's work had a direct impact. The image appears on the page "Legacy" alongside the logos of other companies that Turing has influenced.

Shipman, Tim. "Queen Gives Royal Pardon to Alan Turing, the WWII Codebreaking Hero Who Was Convicted for Being Gay Then Sterilized by the State." Daily Mail, Daily Mail, 23 Dec. 2013, https://www.dailymail.co.uk/news/article-2528697/Queen-pardons-wartime-codebreaking-hero-Alan-Turing.html. Accessed 14 Jan. 2023.

The newspaper article includes a headline of the Queen pardoning Turing's conviction of homosexuality after his death. The article appears on the page "Depravatio" to emphasize how Turing was wrongfully prosecuted.

Multimedia

"What Alan Turing Means to Us." *YouTube*, YouTube, 23 June 2019, https://www.youtube.com/watch?v=RrEdJDpskjo. Accessed 23 Jan. 2023.

Video interviews with individuals at The Alan Turing Institute which is used to show Turing's legacy and impact. The video appears on "Legacy" alongside other examples of Turing's impact.