



ISSN: 0976-3376

Available Online at <http://www.journalajst.com>

ASIAN JOURNAL OF
SCIENCE AND TECHNOLOGY

Asian Journal of Science and Technology
Vol. 16, Issue, 04, pp. 13647-13649, April, 2025

RESEARCH ARTICLE

THE GENIUS OF SHAKUNTALA DEVI: EXPLORING THE MIND OF THE HUMAN COMPUTER

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ARTICLE INFO

Article History:

Received 11th January, 2025

Received in revised form

27th February, 2025

Accepted 22nd March, 2025

Published online 30th April, 2025

Keywords:

Shakuntala Devi, Mathematics, Computing,
Astronomy, Human Computer.

ABSTRACT

Shakuntala Devi gained worldwide recognition for being the most prominent human computer globally, showcasing unparalleled skills in the field of computer science and technology. Her remarkable contributions to this domain have solidified her reputation as a pioneer in the field. Due to her extraordinary abilities and prowess, she is widely revered as the "Human Computer of the World" due to her extraordinary abilities. Devi's profound impact on the world of mathematics and computation has left an indelible mark, earning her the admiration and respect of professionals and enthusiasts alike. Through her exceptional talent and dedication, she has transcended boundaries and become an iconic figure in the realm of numbers and algorithms.

Citation: Rajgopal Karmakar, Sampa Sen, Priyanka Das, Alope Pal, Goutam Choudhury and Jatindranath Gain. 2025. "The genius of Shakuntala Devi: exploring the mind of the Human Computer", *Asian Journal of Science and Technology*, 16, (04), 13647-13649

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INTRODUCTION

India has a long history of producing outstanding academics and teachers with extensive understanding of astronomy and mathematics. One of these remarkable individuals is Shakuntala Devi, a respected noblewoman who has astounded the world with her exceptional talent and ability to effortlessly solve complex mathematical problems. The extraordinary woman became famous across the globe for her incredible ability to rapidly solve complex mathematical problems without the aid of tools such as paper, pen, or calculator [1]. Shakuntala Devi was an Indian writer and mental calculator. He was given the name Human Computer when he appeared on a BBC program hosted by Leslie Mitchell on 5 October 1950. In the interview, Shakuntala Devi was asked a difficult mathematical problem which she solved in seconds, but her answer did not match the answer of the channel. Later, after cross-checking, Leslie Mitchell stated that the answer given by Shakuntala Devi was correct and the channel was not. Since then, the name Human Computer has become synonymous with Shakuntala Devi [2]. She was born into a Hindu Brahmin family in Bangalore on November 4, 1929. When he was only three years old, his father noticed that he had an amazing ability to remember numbers. He left the circus company where he worked and organized shows to show off his daughter's math skills. At the age of six, Shakuntala Devi demonstrated her arithmetic skills at the University of Mysore. He moved to London with his father in 1944. She may have been recognised as a child prodigy as early as age five.

It was discovered that she was an adept in extremely difficult mental maths. Her desire to increase human potential led her to create the idea of "Mind Dynamics."

METHODOLOGY

The primary objective of this thorough research investigation is to delve into the notable accomplishments of Sakuntala Devi in the fields of mathematics and astronomy, specifically focused on her rapid and simplified approach to solving mathematical problems. The research for this subject includes literature, scholarly studies on Sakuntala Devi and his works. To obtain information for this study, data from websites and online publications is also used. An organised, thorough process has been used to examine, confirm, and arrange the information received from several sources in order to guarantee a thorough presentation and analysis. In order to support a planned and cohesive conversation on Sakuntala Devi's contributions to Mathematics and astronomy, this required classifying the data under relevant areas [3].

RESULTS AND DISCUSSIONS

Personal life and life as an Author: Shakuntala Devi belonged to a lower-middle-class family and her father used to work in a circus. He had discovered extraordinary mathematical skills at an early age. Her father discovered her exceptional talent when he used to teach her

card tricks when she was three years old. Soon, he left the circus and performed various road shows with his daughter to exhibit her exceptional ability. She did not receive any formal education because her parents could not afford the school fee. In an interview with *Aaj ki khabar*, when asked to whom she would like to accord the credit for her unprecedented talent, she simply says "god gave me this gift". Shakuntala Devi married Paritosh Banerji an IAS officer at Kolkata in 1960. After the birth of their daughter Anupama Banerji, their marriage hit a rough patch and they got separated in 1979, due to private problems. Apart from being a wizard in arithmetic calculations, Shakuntala Devi has authored several books on mathematical calculations as well as written a few fictional novels [4].

The Journey of Being a 'Human Computer': At the age of six, Shakuntala Devi had her first significant performance at the University of Mysore. She reportedly stated, "I had become my family's sole breadwinner, and the responsibility was a huge one for a young child," as reported by The New York Times. My public performing career began when I did my first big presentation at the University of Mysore when I was six years old. When Devi visited Southern Methodist University in 1977, she was able to calculate the 23rd root of a 201-digit number in just 50 seconds, compared to 62 seconds for the Univac 1108—the fastest computer at the time. One of her most notable accomplishments is that, after she proved at Imperial College in London that she could compute the product of two randomly given 13-digit integers in less than 30 seconds, she was entered into The Guinness Book of World Records in 1982 [5]. Shakuntala Devi was the subject of many tests in 1988 by American psychologist, author, and University of California, Berkeley professor Arthur Jensen. Jensen's results were republished in the journal *Intelligence* in 1980. All of the objective tests, however, were unable to determine how she was able to possess such extraordinary mental calculating skills and talents. On the other hand, he acknowledged that extensive training in a certain area may have been crucial to her skill growth. He also mentions in his report that, "*Devi 'perceives' large numbers differently from the way most of us ordinarily do. When she takes in a large number (and she must do this visually), it undergoes some transformation, almost instantly — usually some kind of simplification of the number [6].*"



In 1976, when Ms. Devi performed in New York, The New York Times published an article praising her remarkable abilities. The article mentioned that she could calculate the cube root of 188,132,517 or any other number quickly. Additionally, it stated that she had the ability to determine the day of the week for any given date in the previous century. In a 1990 article, Arthur R. Jensen, a researcher at the University of California, Berkeley, discussed Ms. Devi's intelligence. Jensen pointed out that unlike the character in the movie *Rain Man*, "Devi was not an autistic savant, but rather appeared to be alert, outgoing, friendly, and well-spoken [7]."

In addition, Shakuntala Devi has extraordinary skills in calendrical calculations, enabling her to determine the weekday for any given day in the previous century. Her book "Figuring: the joy of Mathematics" contains some of the approaches and procedures she uses for mental multiplication and calendar calculations. Shakuntala Devi obtained the title of "Human computer" and elevated position as a result of all these significant life accomplishments. She never praised

the title, though, since she thought it was inappropriate to compare the human mind to a computer because the human mind is far more capable than a machine. She carefully applied her mathematics skills to enter the astrological profession as well [8]. The extraordinary talents of Shakuntala Devi may never be fully acknowledged. Her remarkable skills, accuracy, and speed seem almost legendary; she was a uniquely talented Indian mathematician who converted what was once considered unattainable for humans into a reality. Among her numerous incredible achievements were calculating cube roots, seventh roots, and the rapid multiplication of two 13-digit numbers. Known for her proficiency in calculations related to calendars, she had the capability to determine the day of the week for any given date, usually providing an answer in about one second.

CONCLUSIONS

Shakuntala Devi, also known as the Human Computer, was an Indian writer and mental calculator who gained recognition for her exceptional mathematical abilities. Shakuntala Devi's extraordinary journey as a human computer and mathematical prodigy is a testament to the remarkable potential of the human mind. From her early demonstrations of exceptional mathematical abilities to her groundbreaking feats in mental calculations, Devi's legacy continues to inspire awe and admiration. Her refusal to fully embrace the title of "Human Computer" reflects her belief in the boundless capacity of the human mind. She believed that the human mind was superior to any machine. She utilized her mathematical skills in various aspects of her life, including astrology. Moreover, her foray into the astrological profession showcases her multidimensional talents. As we reflect on her life and achievements, it's evident that Shakuntala Devi's impact extends far beyond mathematical prowess, serving as a reminder of the limitless capabilities inherent in each individual. On April 21, 2013, Shakuntala Devi passed away from a heart attack. Shakuntala Devi is an example that challenges the gendered assumptions that persist in our culture, such as "boys are good in maths and girls are good in English." Her pioneering contributions have played a pivotal role in advancing the frontiers of Mathematics and Astronomy, while simultaneously establishing a strong groundwork for upcoming progress in these disciplines. Through the introduction of pioneering concepts and the discovery of groundbreaking phenomena in the realm of mathematics, she has cemented a legacy that is undeniably influential in shaping the landscape of contemporary Mathematics, Theoretical Physics, and Science and Technology [9-11].

Statements and Declarations

Funding and/or Conflicts of interests/Competing interests: The authors did not receive support from any organization for the submitted work. No funding was received to assist with the preparation of this manuscript and conducting this study. No funds, grants, or other support was received. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgement: This article acknowledges the profound impact Shakuntala Devi had on the advancement of Mathematics and Astronomy in India, emphasizing her crucial contributions to the field of Mathematics. Her innovative accomplishments have paved the way for continued developments in both Mathematics and Astronomy.

Dedication: We dedicate this paper to Shakuntala Devi, the remarkable Indian mathematician and human computer, in recognition of her significant achievements and contributions to Mathematics, Astronomy, and Computing.

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