

ASSOCIATION OF STUDENTS OF COMPUTER SCIENCE FOR INFORMATION INTERCHANGE

# ASCII

MARCH 2024

AMAZON'S  
**BOLD ODYSSEY**



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# **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

## **VISION**

To be acclaimed internationally for excellence in teaching and research in Computer Science & Engineering, and in fostering a culture of creativity and innovation to responsibly harness state-of-the-art technologies for societal needs.

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## **MISSION**

- Mission 1: To assist students in developing a strong foundation in Computer Science and Engineering by providing analytical, computational thinking and problem solving skills.
- Mission 2: To inculcate entrepreneurial skills to develop solutions and products for interdisciplinary problems by cultivating curiosity, team spirit and spirit of innovation.
- Mission 3: To provide opportunities for students to acquire knowledge of state-of-the-art in Computer Science and Engineering through industry internships, collaborative projects, and global exchange programmes with Institutions of international repute.
- Mission 4: To develop life-long learning, ethics, moral values and spirit of service so as to contribute to the society through technology.
- Mission 5: To be a premier research-intensive department by providing a stimulating environment for knowledge discovery and creation
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## **PROGRAM EDUCATIONAL OUTCOMES**

- PEO1: Strive on a global platform to pursue their professional career in Computer Science and Engineering.
- PEO2: Contribute to product development as entrepreneurs in inter disciplinary fields of engineering and technology.
- PEO3: Demonstrate high regard for professionalism,integrity and respect values in diverse culture, and have a concern for society and environment.
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## **PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES**

- PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3: Design and development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to Assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.
- PSO1: Adopt Standard Practices: Ability to design and engineer, innovative, optimal and elegant computing solutions to interdisciplinary problems using standard practices, tools and technologies.
- PSO2: Research and Innovation: Ability to learn emerging computing paradigms for research and innovation.

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# FROM BOOKSTORE

AMAZON

TO

*the*

*Global Powerhouse*

In the annals of contemporary commercial history, few narratives rival the meteoric ascent of Amazon. Founded in 1994 by Jeff Bezos, the corporation commenced as an online purveyor of books amidst the nascent landscape of the internet. However, Bezos' vision transcended the conventional boundaries of e-commerce, propelling Amazon into a formidable conglomerate that has reshaped the global marketplace.



## GENESIS OF AMAZON

During the incipient stages of the internet era, Jeff Bezos, forsaking a secure career in investment banking, embarked on a journey to harness the potential of the burgeoning digital sphere. Inspired by the transformative capabilities of the internet, he envisioned an online platform to revolutionize the distribution of literature, thus birthing "Amazon" as a symbol of vast potential and relentless ambition. Initially named Cadabra Inc after the magical words Abracadabra, Bezos later transitioned to the iconic name we recognize today.



In the contemporary landscape, Amazon has evolved from its roots as a bookseller to a ubiquitous presence in various consumer sectors. Its diverse portfolio spans e-commerce, digital media, cloud computing, and smart devices, showcasing unparalleled innovation and market dominance. Ventures such as Amazon Prime Video, AWS, Kindle, and Alexa underscore its transformative impact on modern commerce, reflecting Amazon's steadfast commitment to innovation and strategic diversification.

Central to Amazon's ascent is its innovative business model, marked by customer-centricity, continuous innovation, and strategic expansion. By prioritizing convenience and accessibility, Amazon has revolutionized the consumer experience, offering an unmatched range of products and services. Anchored by the Flywheel Effect—a cycle of growth driven by customer satisfaction and continuous innovation—Amazon has solidified its global leadership in commerce and technology, shaping the landscape of modern retail. Despite encountering both successes and challenges, Amazon's unwavering focus on innovation and customer satisfaction has propelled its success in diverse markets, with a market capitalization exceeding \$1.6 trillion, fueled by robust revenue streams from e-commerce, AWS, and other ventures.



# Amazon's Trailblazing Innovations

Amazon Pay stands out due to its seamless integration with various platforms, enabling swift and secure transactions using Amazon account credentials. Leveraging the trusted Amazon brand, it enhances user confidence and boosts conversion rates for merchants. With one-click purchases and robust buyer protection policies, it ensures convenience and security in transactions. Additionally, its multi-platform support and integration with Amazon's ecosystem offer flexibility and loyalty rewards, further enhancing the overall customer experience.



The Amazon Fire Stick stands out for its diverse streaming options, voice control with Alexa, portability, affordability, integration with Amazon ecosystem, and robust parental controls. These features collectively make it a premier choice for users seeking a versatile and user-friendly streaming solution.



Amazon Prime, renowned for its unique qualities, offers expedited shipping, exclusive access to Prime Video, Prime Music, and Prime Reading, integrated with Alexa for seamless control, and provides exclusive deals and discounts, making it an indispensable asset for modern consumers seeking efficiency and value.

Amazon Fresh is distinguished by its diverse selection, convenient online ordering, stringent quality control, seamless technology integration, subscription options, and exclusive Prime member benefits, setting it apart as a premier destination for high-quality groceries.



Alexa, characterized by its unique qualities, represents a pinnacle of innovation in artificial intelligence. As Amazon's virtual assistant, Alexa stands out for its advanced natural language processing capabilities, allowing seamless interaction and task completion through voice commands. Its integration with a vast ecosystem of smart devices enables users to control their homes with unparalleled ease. Furthermore, Alexa's continuous learning and adaptability ensure personalized responses and experiences for each user, cementing its position as a leading voice assistant in today's digital landscape.

prime video



Renowned for its unique attributes, Amazon Web Services (AWS) is a preeminent force in cloud computing. With its unparalleled scalability, reliability, and security features, AWS offers businesses a comprehensive suite of services spanning compute, storage, database, and machine learning. This platform fosters innovation and growth, empowering organizations globally to achieve their objectives efficiently and securely.

# Amazon's Cutting-Edge Technological Breakthroughs



Amazon proudly presents Project Kuiper, a transformative initiative aimed at revolutionizing global broadband access. Rooted in a commitment to empowering unserved and underserved communities worldwide, Project Kuiper endeavors to provide fast, affordable broadband through a constellation of 3,236 satellites in low Earth orbit (LEO).

Billions of people lack reliable broadband access, constraining their connection to vital resources such as education, healthcare, and economic opportunities. Project Kuiper stands poised to bridge this digital divide, offering a lifeline to communities in need while also catering to a diverse range of users, including schools, hospitals, businesses, and government agencies across various nations.

Driven by a commitment to innovation and inclusivity, Amazon embarked on Project Kuiper in 2018. This ambitious endeavor received a significant boost when the U.S. Federal Communications Commission (FCC) granted Amazon a license to deploy and operate Project Kuiper satellites in July 2020.

Project Kuiper's journey is fueled by a dedicated team of over 1,000 experts, spanning multiple disciplines and operating from cutting-edge facilities in Redmond and Kirkland, Washington, as well as other key locations nationwide and globally. Project Kuiper remains steadfast in its mission to deploy at least half of its satellite constellation by July 2026. With our first prototype satellites launched in October 2023, we anticipate providing service to initial customers by the end of 2024, marking a significant milestone in our quest to democratize broadband access.

# Amazon's Cutting-Edge Technological Breakthroughs



## Introducing Amazon Scout

A pioneering venture by Amazon set to redefine the landscape of package delivery. Crafted by a dedicated team of engineers, these autonomous delivery devices, each roughly the size of a small cooler, navigate sidewalks with precision and grace, ushering in a new era of efficiency and convenience in logistics.

Residents in select neighborhoods within Snohomish County, Washington, will have the privilege of experiencing firsthand the seamless delivery experiences facilitated by Amazon Scout. Amazon is honored to partner with the esteemed community of Snohomish County on this inaugural journey. Snohomish County Executive Dave Somers shared his enthusiasm, stating, "We are delighted to welcome Amazon Scout into our community. Similar to Amazon, we are always looking for new ways to better deliver service to our residents. From the latest Amazon innovation to cutting-edge technology, Snohomish County is a great place for entrepreneurial creativity." As we embark on this milestone endeavor, we eagerly anticipate the insights gained from this initial deployment. These insights will serve as the cornerstone for further refinement and enhancement of Amazon Scout, ensuring its sustained evolution towards unparalleled sustainability and convenience in customer deliveries. Join us as we celebrate the arrival of Amazon Scout, a testament to the unwavering commitment to redefining the future of logistics.

# Amazon's Cutting-Edge Technological Breakthroughs



Amazon continues to make significant strides towards its vision of a scalable drone delivery solution, catering to the evolving needs of its customers. Following the successful transition of its Prime two-day shipping program to a one-day service earlier this year, the company acknowledges the perpetual quest for enhanced convenience. Recognizing the potential for even swifter delivery options, Amazon is pioneering the use of autonomous drone technology.

At the recent Amazon re:MARS Conference, the company introduced its latest Prime Air drone design. These drones, fully electric and capable of delivering packages weighing under five pounds within a 30-minute timeframe, can cover distances of up to 15 miles. Notable advancements include a unique hybrid design for vertical takeoffs and landings, as well as sophisticated artificial intelligence to ensure autonomous responses to unforeseen circumstances, prioritizing efficiency, stability, and safety. Leveraging its extensive fulfillment and delivery network, Amazon foresees a rapid scaling of Prime Air services, in line with its commitment to sustainability goals, aiming for net zero carbon shipments by 2030.



# Amazon's Cutting-Edge Technological Breakthroughs



Amazon Rufus stands as a revolutionary breakthrough in customer service technology, harnessing the power of generative AI to deliver personalized assistance like never before. Trained on extensive data sources including Amazon's product catalog, customer reviews, and web information, Rufus offers tailored, recommendations, comparisons, and answers to customer inquiries. What sets Rufus apart are its unique features such as providing insights into product fit, aiding in occasion-based shopping, and facilitating seamless comparisons between product categories. As Rufus enters beta testing in the United States, it represents a transformative leap forward in customer assistance, showcasing Amazon's relentless pursuit of innovation in enhancing the shopping experience.