

COMPUTER SCIENCE

and its major disciplines

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Computer Science

- Encompasses various **specialties** such as **computer science**, **software engineering**, and **computer systems**, focusing on information processing and coordination through **global communication systems**
- Computer science, as a discipline, emerged in the early 1940s from the convergence of **algorithm theory**, **mathematical logic**, and the invention of **electronic computers**.

Computer Science

Computer Science can be defined as three Intellectual Processes according to *The Computing Curricula 1991*

Computer Science

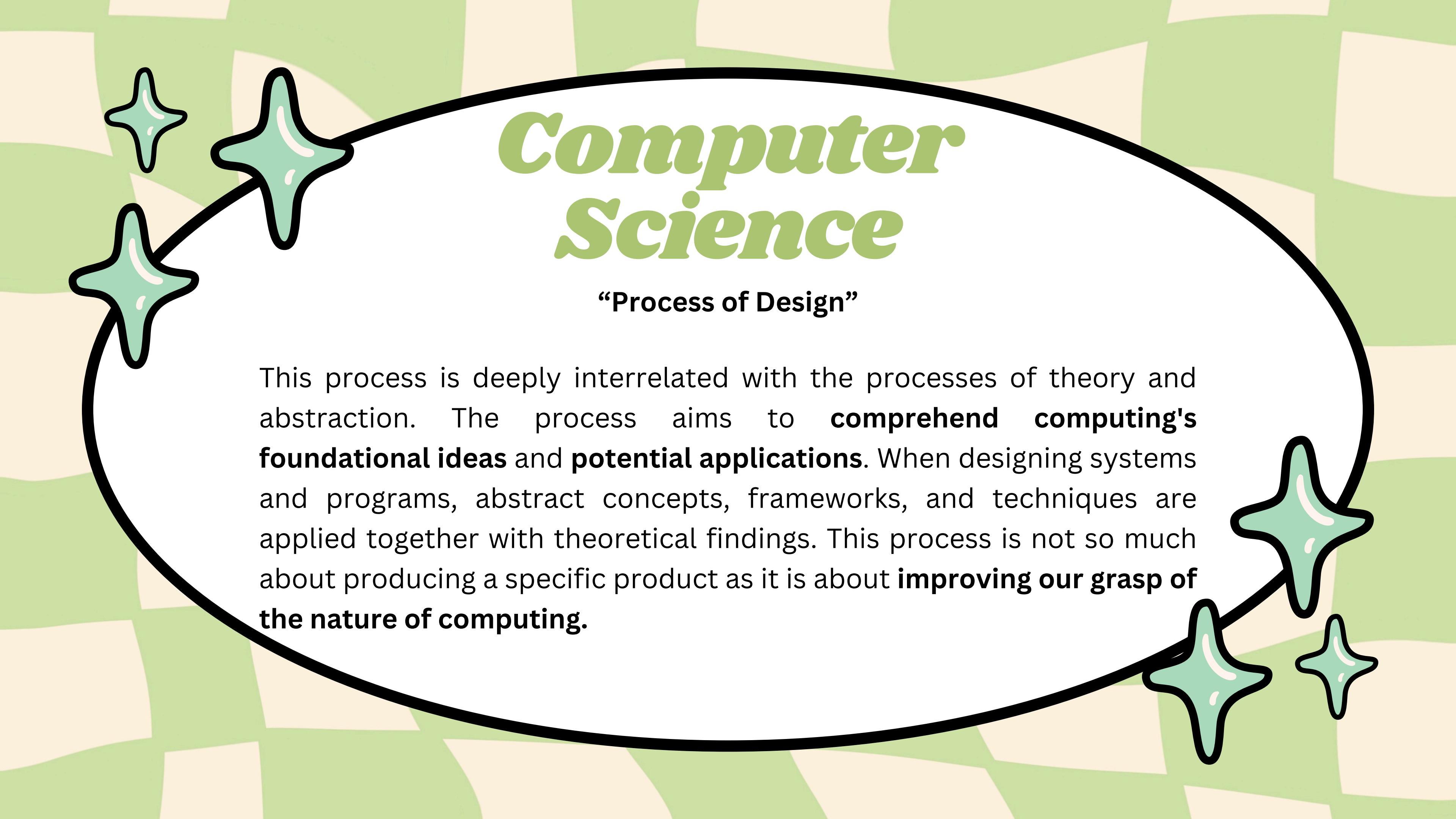
“Process of Theory”

This **computer science** process is derived from the **field of mathematics** that functions in decision making, conjecturing theorems as well as creating proofs that aim to verify hardware and software, analyze performance of particular designs, and establish theoretical limitations of computation.

Computer Science

“Process of Abstraction”

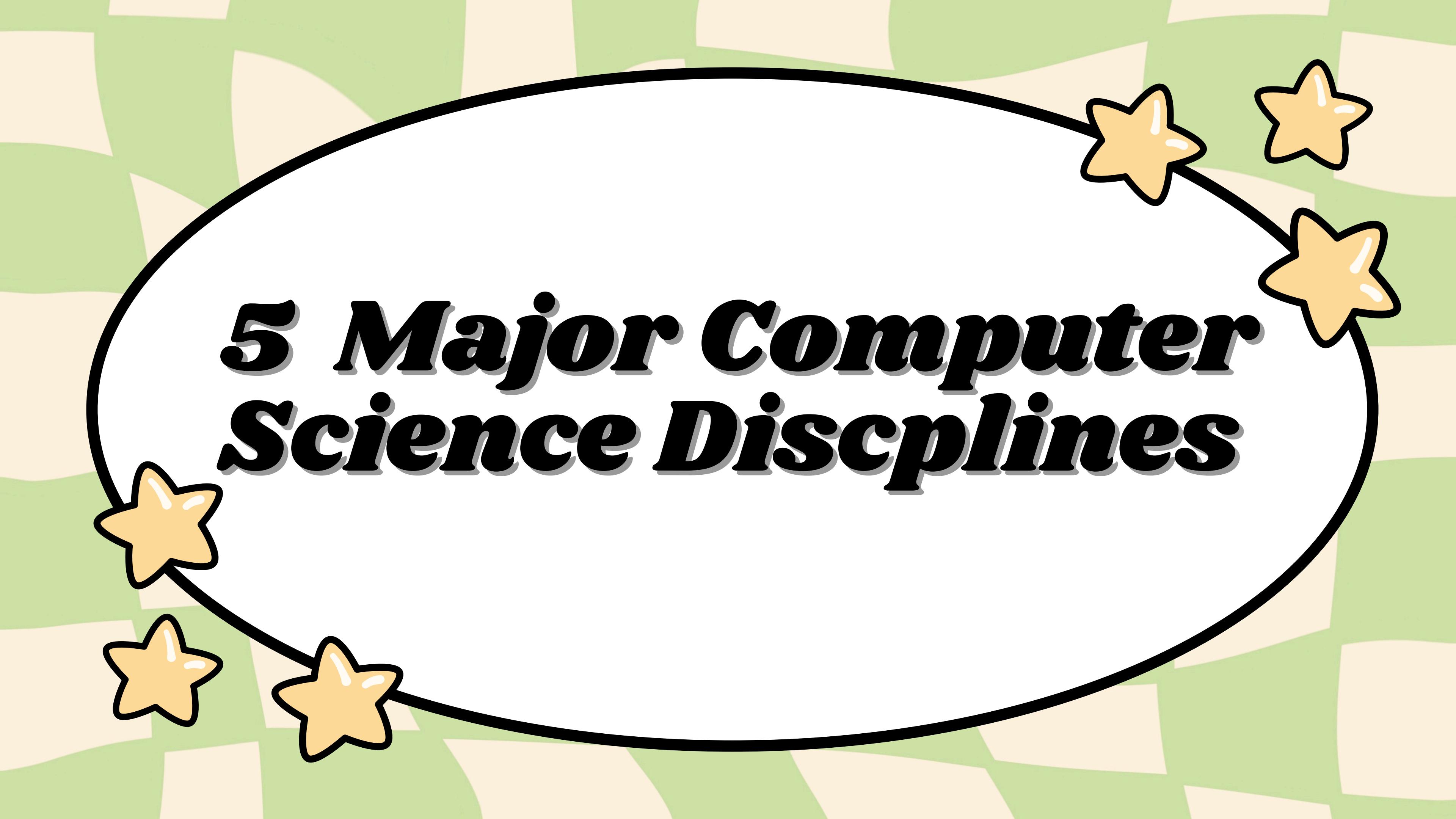
This **computer science** process involves **recognizing patterns**, comparing and intersecting situations with one another and distill models that express common characteristics and disregarding attributes that differ from case to case. Computer science’s focus on this process resembles that of the natural sciences, where **theories are created from experimental observations.**



Computer Science

“Process of Design”

This process is deeply interrelated with the processes of theory and abstraction. The process aims to **comprehend computing's foundational ideas** and **potential applications**. When designing systems and programs, abstract concepts, frameworks, and techniques are applied together with theoretical findings. This process is not so much about producing a specific product as it is about **improving our grasp of the nature of computing**.



5 Major Computer Science Disciplines

Computer Engineering

Students studying **computer engineering (CE)** learn how to create digital hardware and software systems, such as communications systems, computers, and computer-containing devices. Programming for them is centered on digital devices and their connection to other devices and users.

Computer Science

Computer science (CS) includes everything from theory to programming to the most recent advancements in computing solutions. Graduates in computer science have a foundation that enables them to adjust to novel concepts and technology.

Information Systems

Information systems (IS) is the study of the data that computer systems can produce to support a business, nonprofit, or other entity or governmental body in establishing and accomplishing its objectives. It also addresses the procedures that a business is capable of applying and enhancing using information technologies.

Information Technology

Information Technology (IT) specialists are equipped with the necessary knowledge and real-world, hands-on experience to manage an organization's information technology infrastructure and its users. They take on the duty of choosing the proper gear and software for a company.

Software Engineering

The goal of **software engineering (SE)** is to create and manage software systems that meet all client requirements, operate with efficiency and dependability, and are reasonably developed and maintained. It is significant due to the effects of costly, large-scale software systems and the function of software in applications that are essential to safety.

Reflection

At the heart of computing and computer science as a discipline are the users and coders who breathe life into their code. Computer science is not merely a profession to be done but rather a skill that takes years and years to master. Decades of algorithms, data structures, and theoretical foundations have brought us to a point of absolute efficiency and innovation. Yet, the journey is far from over. Each day, new challenges emerge, demanding fresh perspectives and new solutions. The field constantly evolves, driven by the relentless curiosity and creativity of its community, and personally, I cannot wait to join that community and stand among the shoulders of giants.

Being part of this journey means embracing a mindset of lifelong learning and adaptability. It means collaborating across disciplines, and as Carolinians, our social responsibility inclines us to use each discipline's diverse range of knowledge to tackle real-world issues. Whether it's developing sustainable technologies to combat climate change, creating secure systems to protect data privacy, or designing accessible interfaces to bridge the digital divide between those with technology and those without it, the opportunities to make a meaningful impact are boundless.

Using the five major computer science disciplines, we can build systems that better serve everyone. As I embark on this journey, I am eager to contribute to this collective effort, driven by a vision of technology as a force for good, capable of enriching lives and empowering individuals.

As I prepare to immerse myself in this vibrant community, I am inspired by the pioneers and great professors who came before me and motivated by the potential to contribute to the next wave of advancements. It is an exciting time to be at the intersection of technology and human inventiveness, where the only limit is our imagination.

About me

Educational Background

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (2022-2024) University of San Carlos North Campus

I chose IT as my college major since coding has always intrigued me and I've always loved to innovate and craft ideas that come into my head and I love logical and analytical reasoning.



Clydd

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