

# International Computer Science Competition

## Vision and Values



Computer Science is the bedrock of the modern world, driving innovation and shaping nearly every aspect of our lives. From the algorithms that connect us globally to the artificial intelligence transforming industries, its principles empower us to solve complex problems and build the future. Our society urgently needs talented computer scientists, engineers, and innovators to design, develop, and sustain the technologies of tomorrow.

The International Computer Science Competition offers students a platform to challenge their critical and logical thinking, explore diverse CS concepts, and delve deeper into this exciting discipline beyond the standard school curriculum. We believe that blending education with friendly competition can inspire students to develop a lasting passion for computer science, potentially leading to fulfilling careers in research, development, and engineering.

The International Computer Science Competition aims to be accessible to all students from all countries, regardless of their background, school, or institution: all you need is a pen, paper, access to a computer, and an internet connection to join!

## What makes ICSC unique?

While competition is part of ICSC, our core mission is to foster genuine engagement with computer science, sparking curiosity and encouraging further exploration in this and related scientific fields. ICSC is a learning journey, enabled by diverse problem formats that enhance a student's understanding through practical application. Key aspects that distinguish ICSC include:

- **Internationality:** From the very first round, ICSC is a truly global event. All participants tackle the same challenges, ensuring fair assessment and fostering international connections.
- **Digital Accessibility:** We utilize the power of the internet to open participation to students everywhere, regardless of geographic location or school affiliation. While teacher guidance is beneficial, motivated individuals can participate independently from anywhere.
- **Exploration of Theory and Practice:** ICSC embraces the full scope of computer science. While many competitions focus primarily on programming as a means of demonstrating logical thinking, ICSC recognizes that the rise of artificial intelligence demands stronger emphasis on conceptual and mathematical problem-solving. Accordingly, the competition covers a broad set of topics, including information theory, machine learning, natural language processing, cryptography, optimization theory, and computer architecture. These are presented both as abstract, theory-based problems and as practical programming problems requiring functional code.
- **Real-World Research:** Bridging the gap between academic learning and cutting-edge research is vital, especially in a rapidly evolving field like computer science. ICSC problems typically incorporate concepts from recently published research papers. This unique

feature provides many participants with their first exposure to actual CS research; a field where groundbreaking work is published daily, sometimes even by students like you!

- **Scaling Difficulty Levels:** Our problems are designed to engage both experienced computer science enthusiasts and those beginning to explore the subject beyond the classroom. The difficulty ranges from approachable exercises that reinforce foundational concepts to advanced challenges that introduce novel formats and require deeper analytical thinking. This ensures a rewarding and intellectually stimulating experience for all participants.
- **Online Tools for Educators:** We equip teachers and schools with resources and support. A dedicated teacher interface allows for streamlined management of student submissions, results tracking, certificate access, and supervision of the Final Round exam.
- **Local Communities & Ambassadors:** ICSC encourages the formation of local student groups focused on computer science. Our Ambassador Program empowers motivated students to inspire peers, organize local events, and build vibrant communities centered around shared interests in CS.