Competitive Data Sciences

Today, Competitive **Data Sciences** is more popular than ever. The Internet has played an important role in this progress. There is now an active online community of competitive Data Scientist and there are many competitions that take place every week. At the same time, the difficulty of competitions increases. Techniques that only the best participants mastered a few years ago are now standard tools known to many people.

What are Competitive Data Sciences?

While a **Data Scientist** writes evidence to show that his algorithm works, a competitive Data Scientist implements his algorithm and subjects it to a competitive system. Then the algorithm is tested using a set of test cases, and if it passes all, it is accepted.

The main advantage of Competitive Data Sciences is that competition issues require deep thinking. In particular, there are no spoilers in the problem statements. This is actually a serious problem in many algorithmic designs. Competitive Data Sciences combines two themes: **Algorithm Design** and **Implementation of algorithms**.

Design of Algorithms

The heart of Competitive Data Sciences is to invent effective algorithms that solve well-defined computational problems. Algorithm design requires problem-solving and math skills. Often a solution to a problem is a combination of well-known methods and new knowledge. Mathematics plays an important role in Competitive Data Sciences. In fact, there are no clear boundaries between algorithm design and mathematics.

Implementation of Algorithms

In competitive Data Sciences, solutions to problems are evaluated by testing an algorithm implemented using a set of test cases. So, after finding an algorithm that solves the problem, the next step is to implement it correctly, which requires good programming skills. Competitive Coding differs greatly from traditional

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software engineering: programs are short, they need to be written quickly, and it is not necessary to maintain them after the competition.

My Views on Competitive Data Sciences

Learning competitive Data Sciences require a great deal of work. When solving problems, it should be borne in mind that the number of problems solved is not so important as the quality of the problems. It's tempting to pick out problems that seem easy and enjoyable, solve them, and skip issues that seem difficult and time-consuming. However, to really improve your skills, you have to focus on the latter type of problems.

Another important observation is that most Data Science problems can be solved using simple and short algorithms, but the most difficult is to invent the algorithm. Competitive Data Sciences is not about learning complex and obscure algorithms by heart, but rather about learning how to solve problems and tackle difficult problems with simple tools.

Finally, some people think that it's fun to design algorithms but boring to implement them. However, the ability to implement algorithms quickly and correctly is an important asset, and this skill can be put into practice. It's a bad idea to spend most of the contest time writing code and finding bugs, instead of thinking about how to fix the problems.

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