# What is a Computer and Information Research Scientist?

A computer and information research scientist is an expert in the field of computer science, usually holding a PhD or professional degree. These scientists use the collective knowledge of the field of computer science to solve existing problems and devise solutions to complex situations.[\n]

They work to expand the amount of knowledge available to computer science and to make computer technology more efficient, sometimes making leaps in software technology that are as important as advances in computer hardware capabilities.[\n]

[extend]These professional researchers are the ones responsible for finding vulnerabilities in software before malicious hackers have a chance to cause damage. For example, the [Compression Ratio Info-Leak Made Easy](https://www.isecpartners.com/blog/2012/september/details-on-the-crime-attack.aspx), or CRIME exploit, was discovered by computer and information research scientists Thai Duong and Juliano Rizzo, leading to the abandonment of TLS compression in modern Web browsers.[\n]

Without these professionals working on advanced problems, modern technology would be much less advanced and robust.[\n][/extend]