

# Computer and Information Research Scientists

SOC: 15-1221 • Career Profile Report

## ■ Key Facts

**\$140,910**

Median Salary

**40,300**

Employment

**+20.0%**

Growth Rate

## ■ Requirements & Salary Range

**Education:** Master's degree

## ■ Automation Risk Assessment

**Low Risk** - 12.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

## ■■ Work-Life Balance

**8.8/10** - Excellent work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	7.4/10	Investigative	9.2/10
Artistic	4.6/10	Social	5.4/10
Enterprising	5.6/10	Conventional	6.8/10

## ■ Top Skills Required

Analytical skills, Communication skills, Detail oriented, Interpersonal skills, Logical thinking, Math skills, Problem-solving skills

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Computer and Information Research Scientists are advanced computing professionals who design and explore **new ways to use technology, algorithms, and computing systems**. They work at the cutting edge of computer science, developing innovations that drive artificial intelligence, cybersecurity, data science, networking, and emerging technologies. Their research shapes how future software, hardware, and digital systems are built and used.

This career is well suited for individuals who enjoy deep problem-solving, abstract thinking, and pushing the boundaries of what computers can do.

## What Do Computer and Information Research Scientists Do?

Computer and information research scientists study complex computing problems and invent new approaches to solve them.

Common responsibilities include:

- Conducting original research in computer science or related fields
- Designing and testing new algorithms, models, and architectures
- Developing experimental software or computing systems
- Solving complex problems in areas like AI, security, or data processing
- Publishing research findings in journals or conferences
- Collaborating with engineers, scientists, and product teams
- Translating theoretical concepts into practical applications

## Areas of Research and Specialization

These scientists often focus on specific domains within computing:

- Artificial Intelligence and Machine Learning: Creating systems that learn and reason.
- Data Science and Big Data: Developing methods to analyze massive datasets.
- Cybersecurity and Cryptography: Designing secure systems and defenses.
- Computer Systems and Architecture: Improving hardware-software interaction.
- Human-Computer Interaction: Enhancing how people interact with technology.
- Algorithms and Theory: Advancing the mathematical foundations of computing.

## Skills and Abilities Needed

Computer and information research scientists combine advanced technical knowledge with creativity and rigor.

### **Core Professional Skills**

### **Personal Qualities That Matter**

## Education and Career Pathway

This occupation typically requires extensive formal education:

- Bachelor's Degree: In computer science, mathematics, or a related field
- Master's or Doctoral Degree: Commonly required for research-focused roles
- Research Experience: Through labs, theses, or funded projects
- Postdoctoral or Specialized Research Roles (optional): Advanced academic or industry research
- Continuous Learning: Staying current with fast-evolving technologies

## Where Do Computer and Information Research Scientists Work?

These professionals work in environments focused on innovation and discovery:

- Technology Companies and R&D; Labs
- Universities and Academic Research Institutions
- Government Research Agencies
- Defense and National Security Organizations
- Artificial Intelligence and Data Science Firms
- Startups and Advanced Technology Ventures

Work settings are typically office-based, research-oriented, and collaborative.

## How Much Do Computer and Information Research Scientists Earn?

Earnings vary by sector, education level, and research focus:

- Entry-Level Research Scientists: Typically earn high professional salaries
- Experienced or Specialized Researchers: Often earn significantly more
- Senior Scientists or Research Leads: May earn top-tier compensation

Compensation is often higher in industry and private research labs.

## Is This Career Difficult?

This career is intellectually demanding and requires mastery of advanced mathematics, theory, and programming. Problems may take months or years to solve, and progress can be incremental. The challenge lies in sustaining focus, rigor, and creativity while working at the frontier of knowledge.

## Who Should Consider Becoming a Computer and Information Research Scientist?

This career may be a strong fit if you:

- Enjoy abstract thinking and complex problem-solving
- Are deeply interested in how computers work at a fundamental level
- Like research, experimentation, and innovation
- Are comfortable with advanced math and theory
- Want to shape the future of technology

## How to Prepare Early

- Study computer science, mathematics, and statistics
- Learn multiple programming languages deeply
- Participate in research projects or coding competitions
- Read academic papers and follow emerging technologies
- Pursue internships or lab-based research experiences

Computer and information research scientists drive technological progress by transforming theoretical ideas into breakthroughs that redefine computing, power innovation, and shape the digital future.