# Computer Science

A Computer Science major focuses on the theory, development, and application of software and systems. Students learn programming, algorithms, data structures, computer architecture, and software engineering principles to solve complex problems and create innovative technologies. Typical industry sectors for computer science professionals include software development, artificial intelligence, cybersecurity, finance, gaming, healthcare, and telecommunications. Graduates can pursue roles such as software engineer, data scientist, machine learning engineer, and systems architect.

**Job Title Examples:**

- Software Developer
- Data Analyst
- Systems Administrator
- Web Developer
- Network Engineer
- Cybersecurity Analyst
- QA Tester
- Application Support Analyst
- Cloud Engineer
- IT Support Specialist

**Hard and Soft Skills Needed:**

**Hard Skills:**

1. Programming Languages (e.g., Java, Python)
2. Algorithms and Data Structures
3. Database Management
4. Software Development
5. Network Configuration

**Soft Skills:**

1. Problem-Solving
2. Communication
3. Teamwork
4. Critical Thinking
5. Adaptability

**Further Education/Training Required and/or Suggested:**

A BS in Computer Science qualifies students for entry-level positions, but additional certifications can enhance career prospects:

To Enter the Field:

1. CompTIA A+ Certification:
    - For foundational IT support roles.
2. Microsoft Certified Solutions Associate (MCSA):
    - For roles involving Microsoft technologies.

To Advance:

1. Certified Information Systems Security Professional (CISSP):
    - For cybersecurity roles.
2. Cisco Certified Network Associate (CCNA):
    - For networking and systems administration roles.
3. Oracle Certified Professional (OCP):
    - For database administration and management.
4. AWS Certified Solutions Architect:
    - For cloud computing roles.

Summary:

Certifications like CompTIA A+, CCNA, CISSP, and AWS can enhance job prospects and career growth in computer science.

**Professional or Student Associations:**

- Association of Computing Machinery (ACM)
- Association for Information Systems (AIS)
- Women in Technology International (WITI)
- Python Software Foundation (PSF)
- Google Developer Student Clubs (GDSC)
- Society of Women Engineers
- National Society of Black Engineers