



# Software Engineering

**Architects of the digital age and information economy!** From smartphones and gaming equipment to wearable technologies and smart home devices, computer systems are ingrained into daily lives. Software and computer science engineers develop applications and programs that can accomplish a range of functions.

## **Where do Software Engineers Work?**

Software engineers work in a variety of organizations, including:

- Software Developers
- Computer System Design Firms
- Electronics Manufacturers
- Universities
- Start-Ups

## **Explore Our Software Curriculum**

### **Grades 3-5:**

Navigating a Maze  
Sumobot Challenge  
Robot Soccer Challenge

### **Grades 6-8:**

Mars Rover App Creation  
Automatic Floor Cleaner Computer Program Challenge  
Wear's the Technology?

### **Grades 9-12:**

Testing Software Programs with JUnit  
Flow Charting App Inventor Tutorials  
Java Programming: Testing the Edges

## **Software engineering spans many disciplines, but is generally broken into a few subfields:**

mathematical foundations, algorithms, data structures, artificial intelligence, communication and security, databases, software engineering, and programming language.

## **What do Software Engineers Study?**

Knowledge of one or more computer programming languages is essential for software and computer science engineers. In addition to the understanding of data structures, algorithms, numerical methods, graphics, statistics, and data visualization, software and computer science engineers study logic, human-computer interactions, programming, and design. Hands-on projects for software and computer science engineers are often multidisciplinary and may include programming software, designing hardware solutions and computer circuits, or testing machine learning systems.