

# Computer Science

*–Invent the Future–*



**“Everybody should learn how to program a computer... Because it teaches you how to think.”**

**-Steve Jobs**

# What is Computer Science?

CS is **designing**  
computing devices and  
**programming** them



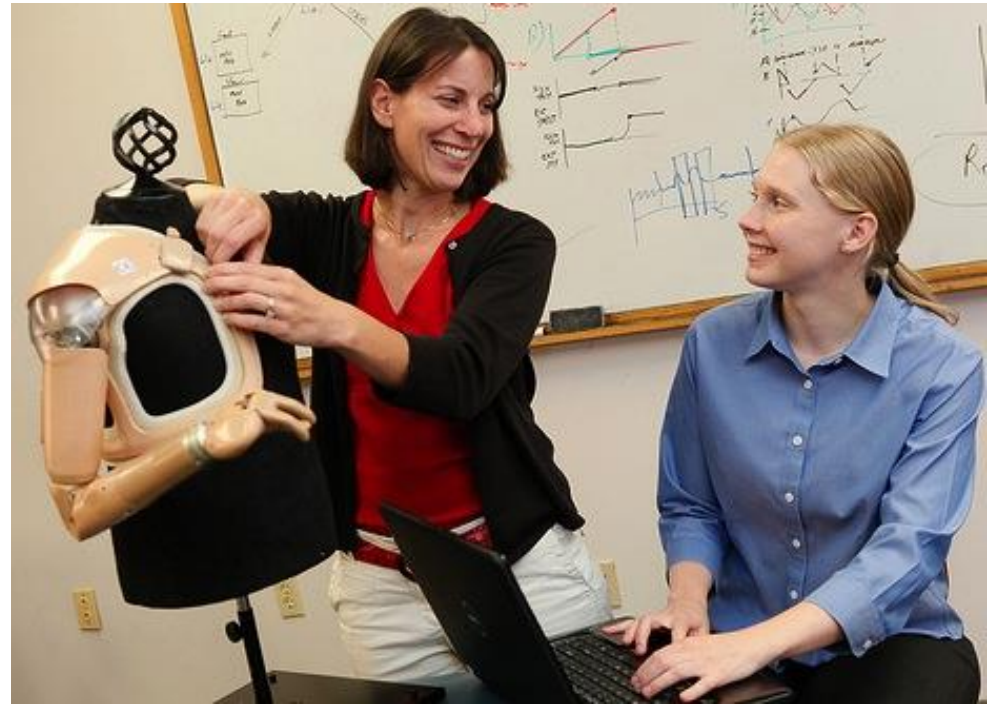
# Computing Connects to Other Careers

*For instance: Are you interested in **health fields**?  
You might want to study...*

...**robotics** and invent digital prostheses

...**computer engineering** and build the next generation of laser surgical tools

...**bioinformatics** and design a life-saving drug





# Computer Science is *engineering new products*

**Do you  
want to:**

Create  
devices  
that can  
do the  
work for  
you?



*Google Glass*

# Computer Science is *visualizing and creating imagery*

**Do you like:**

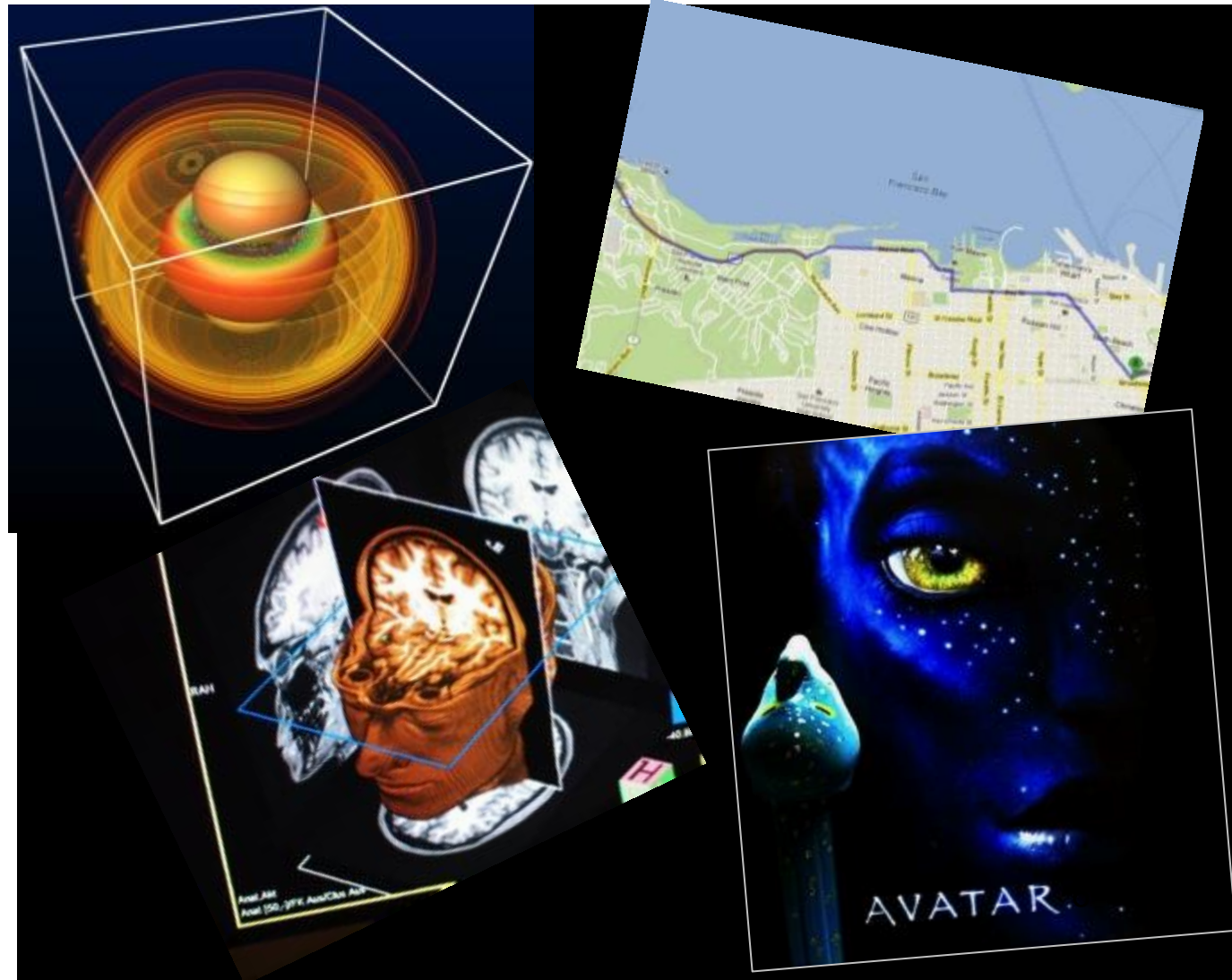
Art?

Science?

Game Design?

Theater?

Movies?

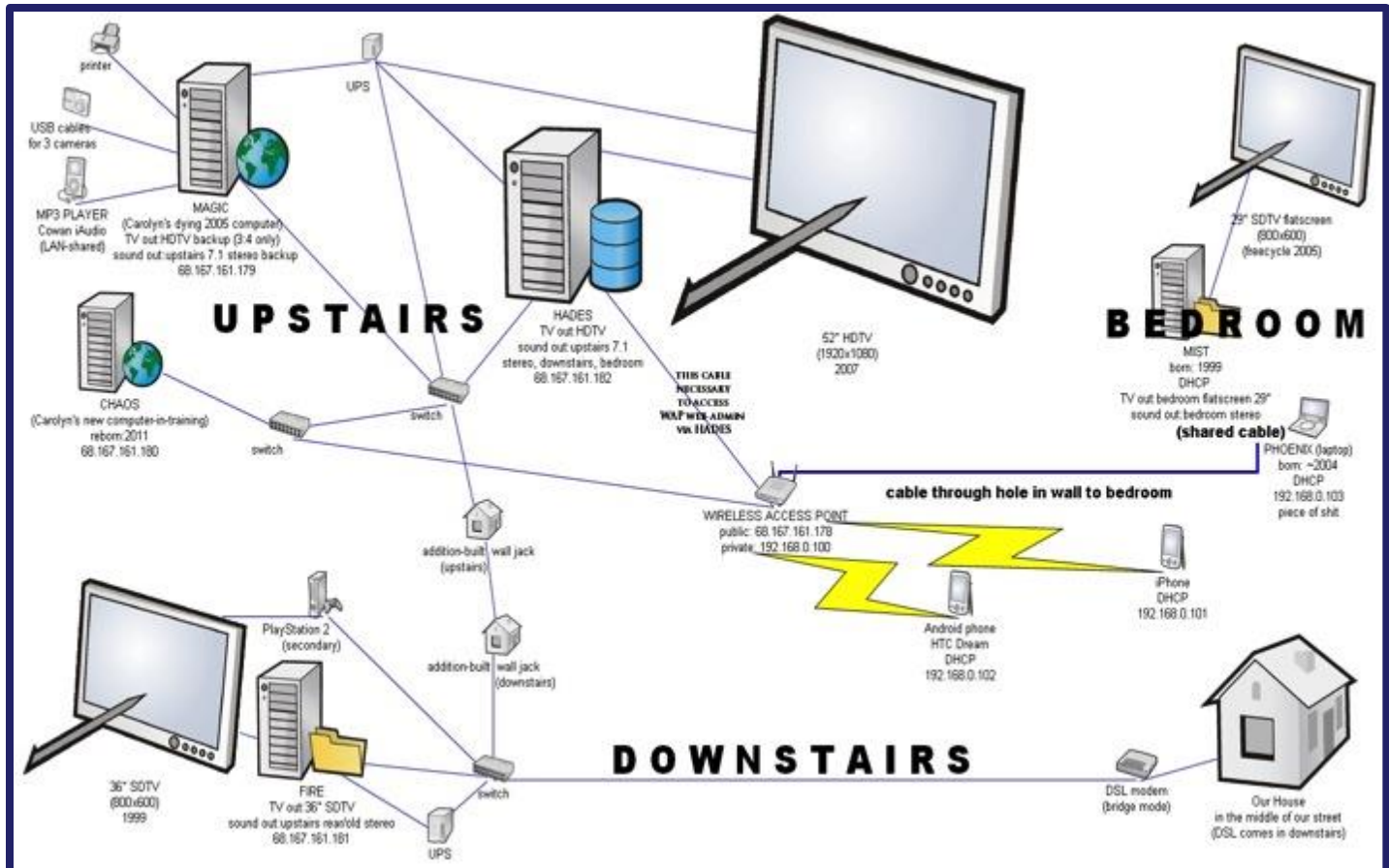


# Computer Science is *Infrastructure and Networks*

Do you  
want to  
help:

Keep  
computer  
systems up  
and running?

Invent new  
ways for  
technologies  
to connect?





# Computer Science is *Computer Forensics and Cyber Security*

**Do you want  
to help:**

Solve crime?

Keep us  
safe?

Secure  
information?





# Computer Science is *Design*

**Do you  
want to:**

Make  
models?

Design  
cars,  
houses,  
fashion,  
anything?



You can always find a field that computer  
Science can be applied to

# Paths to Careers

How people  
get started in  
Computer  
Science



# Database Administrator



- Database administrators (DBAs) manage an organization's data. They ensure that databases run efficiently and are secure from unauthorized users. DBAs are also responsible for organizing a company's data and storing it efficiently.
- The job generally requires a **bachelor's** degree in management information systems (MIS) or a computer-related field.



# Database Administrator

- Moreover, DBAs must have an understanding of database languages, the most commonly used being Structured Query Language, also known as **SQL**. A DBA will have to become familiar with whichever programming language an employer uses.
- **Median Annual Salary:** \$90,070 (\$43.3 /hour)
- **Projected future growth:** **11%** by 2026

# Software Developer



- **Median annual salary:** \$103,620
- Many people working in this field have a **bachelor's** degree.
- Some employers even prefer job candidates who have a **master's** degree.
- **Projected future growth:** **24%** through 2026

# Web Developer



- Web application developers use programming languages to create online software that meets client specifications. A developer may work in multiple programming languages and operating systems.

# Mobile App Developers



- Mobile app developers create new products or adapt existing ones for use on phones and tablets.
- Due to the ever-changing mobile ecosystem, many app developers are self-taught. It's also common for developers to have taken courses in computer science - some even have masters' degrees or PhDs in the field.
- **Projected future growth: 57%** through 2020<sub>16</sub>



# Computer Systems Analysts



- Computer systems analysts help companies or other organizations use computer technology effectively and efficiently. They incorporate new technology into current systems after doing cost-benefit analyses to determine whether it is financially sound and will serve the entity well.

# Computer Systems Analysts

- They must have an understanding of both **business and information technology (IT) needs and limitations**. Their responsibilities include consulting with managers to determine IT-related needs.
- Most computer systems analysts have a **bachelor's** degree in a computer-related field. However, since they work closely with the business side, many also have a business background by experience or education.
- **Projected future growth: 9%** by 2026
- **Median Annual Salary: \$88,740** (\$42.66/hour)

# Market Research Analyst



- Market research analysts help companies understand what products people want, who will buy them, and at what price. They collect data on consumers and products, analyze the findings, and prepare reports for use by their colleagues and clients.

# Market Research Analyst

- some have degrees in **statistics**, **math**, or **computer science** while others have backgrounds in **business administration**, the **social sciences**, or **communications**.
- **Projected future growth: 32%** through 2022



# Information Security Analyst



- Information security analysts coordinate and execute measures to protect an organization's computer networks and systems.
- Most information security analysts have a **well-rounded computer education**, including a bachelor's in computer science, programming, or a related discipline.

# Information Security Analyst

- **Projected future growth: 28%** through 2026
- median salary for an information security analyst is \$86,170.

# Network Administrators



- Companies and organizations that use more than one computer to carry out necessary functions usually employ network administrators. Network administrators ensure that computers and their software and operating systems work properly and stay updated. They oversee all of the information technology within an organization.

# Network Administrators

- Network administrators possess all levels of education, from **specialized certifications to bachelor's and graduate degrees.**
- Mid-Career (5-10 Years) \$56.000

# Hardware Engineer



- Computer hardware engineers create the physical components that make computers run. They routinely design new hardware systems, test their designs, analyze the results of their tests, and manage the manufacturing of their completed projects. When new software changes users' needs, these professionals redesign hardware to work with the new programs.



# Hardware Engineer

- Candidates typically need at least a **bachelor's degree** to land hardware computer engineering jobs.
- Mid-Career (5-10 Years) \$85,000

# Machine Learning Engineer



- As a machine learning engineer, working in this branch of artificial intelligence, you'll be responsible for creating programs and algorithms that enable machines to take actions without being directed. An example of a system you may produce is a self-driving car or a customized newsfeed.

# Games developer



- Working in games development, you'll be involved in the creation and production of games for personal computers, games consoles, social/online games, arcade games, tablets, mobile phones and other handheld devices.
- Large games companies will employ games developers as programmers.

# We should:

- **Evaluate our interests**
- **Assess our skills**
- **Consider Our Current State**
- **Contemplate Your Future**



# Thanks





