College of Computing & Software Engineering
Why computing?

1. Computing is part of everything we do! Understanding different dimensions of computing is part of the necessary skill set for an educated person in the 21st century.

Computing is NOT just programming.
Why computing?

2. It enables you to solve complex, challenging problems
3. Computing enables you to make a positive difference in the world
4. Computing offers many types of lucrative careers and ... 
5. Computing jobs are here to stay, regardless of where you are located 
   The Bureau of Labor Statistics estimates 1.4M new jobs in computer science by 2020
Why computing?

6. Expertise in computing helps you even if you choose a different career.
Why computing?

7. Computing has space for both collaborative work and individual effort.
Why computing?

8. Great opportunities for true creativity and innovativeness
   – Creating high-quality computing solutions is a highly creative activity

9. Computing is an essential part of well-rounded academic preparation

10. Future opportunities in computing are without boundaries.
    – Almost impossible to predict what will happen next

Some Statistics

• **58% of all new jobs** in STEM are in computing
  Only **8%** of STEM graduates are in computing

• A computing major can earn **40% more** than the average college graduate

• Computing Jobs are the **#1 source** of new wages in the United States
  500,000 current openings, **jobs in every industry and every state**

• Jobs projected to grow at **twice** the rate of all other jobs
Why KSU CCSE

The College of CSE

• Has over 3,500 students
• Is the 2nd largest college on Marietta campus and the 5th largest college at KSU
• Has more than 60 full time faculty and staff
• Focuses on teaching & research
• Is active in the community
• Located on Marietta campus (except BA-ACS – Kennesaw Campus)
Features

• The Marietta campus is home to Computing, Engineering, Architecture and Mathematics.
• Themed housing on both campuses (including Gaming and Geek housing on Marietta campus).
• Marietta campus has smaller population (around 9,000 students) whose major is based on this campus. KSU has more than 36,000 students overall.
• Degrees based on the Marietta campus can be completed without having to go to Kennesaw. Students can take courses at the Kennesaw campus if they wish.
• Big Owl Buses transport students between campuses and to nearby locations.
• Variety of events hosted year-round – Computing Showcase, Hackathon, Science Olympiad, CEO/CTO Speakers, TEDx Talks, Career Fairs, networking events, and more!
Majors/Programs

**Computer Science**
The study of computer systems architecture, software development, and data communications. The BA-ACS degree focuses on integrated/multi-discipline applied computing.

**Software Engineering**
Software Engineering is the application of a systematic, disciplined, quantifiable approach to the development, operation and maintenance of software, i.e., the application of engineering to software.

**Information Technology**
The study of systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to enable users to accomplish their personal, organizational, and societal goals. BAS-IT is only available to those students who have earned an Associate of Applied Science degree.

**Computer Game Design and Development**
Apply computing and software engineering techniques to the design and production of digital media for entertainment, research, and education.
Majors/Programs

B.A. in Applied Computer Science
B.S. in Computer Game Design and Development
B.S. in Computer Science
B.A.S. in Information Technology
B.S. in Information Technology
B.S. in Software Engineering
M.S. in Computer Science
M.S. in Information Technology
M.S. in Software Engineering

Graduate Certificates in:
- Computer Science Foundations
- Data Management and Analytics
- High Performance Cluster Computing, HPCC
- Health Information Technology
- IT Foundations
- IT Security
- Software Engineering
- Software Engineering Foundations

Undergraduate Certificates in:
- High Performance Cluster Computing, HPCC
- Health Information Technology

Ph.D. in Data Science and Analytics
In partnership with the Department of Statistics
Computing Interest Major

• CSE 1300 Introduction to Computing Principles - optional (counted as free elective)
• Programming & Problem Solving I
• Programming & Problem Solving II

This sequence of classes builds a solid educational foundation of algorithmic thinking, problem solving and logic, we expect our students to make a B or better in their gate classes

Languages: Python, Java, C#
http://ccse.kennesaw.edu/advising/programmingclasses.php

Tutoring Center http://ccse.kennesaw.edu/ccselabs/ccse-tutoring.php
Students who are in the computing interest major are expected to meet with CCSE Academic Advising to discuss their interests, aptitudes, and which computing major is right for them.

CCSE Academic Advising is a nexus of information, resources, and assistance to encourage students to develop success skills for college and their career.

http://ccse.kennesaw.edu/advising
ccseadvising@kennesaw.edu
Robotics Programming
Drone Programming
Game Jams

https://youtu.be/2-wZPtfgRCw
Hackathons

Annual CCSE Hackathon

2017 Challenges from:
• Anthem
• HPCC Systems/ LexisNexis
• InComm
• TravelPort
• You Are Here
Computing Showcase

Each Semester we celebrate students’ talents, creativity, and their ability to put what they’ve learned in the classroom into practice.
Student Organizations

- Association of Information Technology Professionals (AITP)
- College of Computing Competition Team (3C)
- The Association for Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers Computer Society (IEEE-CS)
- Women In Technology (WIT) on Campus
- Homebrew Computer Club
- Georgia Game Developers Association (GGDA)
- International Game Developers Association (IGDA)
- Autonomous Underwater Vehicle Team (AUVT)
- Aerial Robotics Team
- Bathtub Racing Association (BTRA)
CCSE Research

Highly active, externally-funded faculty Undergraduate Research

G.U.I.T.A.R. Lab

What??

A VR/AR Lab

Games, User-Interaction, Tangibility, Animations and Realities
The Center for Machine Vision and Security Research (CMVSR) is an active research group in Image Analysis, Pattern Recognition, Machine Learning, High-Performance Computing, and Information Security. We are working on the fundamental problems in the fields and their applications for innovative products, as well as Security and Surveillance systems.
The mission of the Center for Applied Gaming and Media Arts (CAGMA) at Kennesaw State University (KSU) is to bring together a diverse collection of teachers and researchers to create game and media applications for enhancing K-16 learning, corporate training, entertainment, and public policy advocacy. The center also provides a venue in which undergraduate and graduate game and media projects can develop into commercially viable products.
Employers

Abacuss Solutions
AT&T
Atlanta Hawks & Philips Arena
Best Buy
Bose
Chick-Fil-A
Comcast
Cox Automotive
Cox Communications
Delta
Fifth Third Bank
Georgia Department of Audits
Georgia General Assembly
Henssler Financial Group
Home Depot
Home Depot
IBM
JP Morgan Chase
LexisNexus

LGE
Lockheed Martin
Aeronautics
Lowe's Home Improvement
Make-A-Wish Foundation
Neusoft Technologies
Norfolk Southern Co.
Piedmont Healthcare
Porsche Business Services
PricewaterhouseCoopers
Red Tree Labs
Shaw Industries
SolTech
Target
TravelPort
TSYS
UPS
Voya
Verint
Wellstar
Employment of computer and information technology occupations are expected to add about 488,500 new jobs, from about 3.9 million jobs to about 4.4 million jobs from 2014 to 2024, in part due to a greater emphasis on cloud computing, the collection and storage of big data, more everyday items becoming connected to the Internet in what is commonly referred to as the “Internet of things,” and the continued demand for mobile computing.

Median annual wage for computer and information technology occupations was $81,430 in May 2015, higher than the median annual wage for all occupations ($36,200).

### Sample of occupations and median pay obtained with a Bachelor’s degree

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Median Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Engineer/Developer</td>
<td>$100K</td>
</tr>
<tr>
<td>Computer Programmer</td>
<td>$90K</td>
</tr>
<tr>
<td>Computer Systems Analyst</td>
<td>$73K</td>
</tr>
<tr>
<td>Database Administrator</td>
<td>$80K</td>
</tr>
<tr>
<td>Business Intelligence Analyst</td>
<td>$83K</td>
</tr>
<tr>
<td>Network Sys Admin</td>
<td>$68K</td>
</tr>
<tr>
<td>Java Developer</td>
<td>$102K</td>
</tr>
<tr>
<td>C++ Developer</td>
<td>$115K</td>
</tr>
<tr>
<td>Software Quality Assurance Tester</td>
<td>$90K</td>
</tr>
</tbody>
</table>
A few faces
Useful Links

CCSE Academic Advising e-mail: http://ccse.Kennesaw.edu/advising

Department of Career Planning and Development: http://careers.kennesaw.edu/

Information about CCSE degree curriculum: http://ccse.kennesaw.edu
Thank You!

Questions?