



Georgia Tech College of Computing

School of Cybersecurity and Privacy

Creating security for everyone and everything, everyday.



PRESIDENT BIDEN'S EXECUTIVE ORDER ON IMPROVING THE NATION'S CYBERSECURITY

Reiterating the Challenge

Incremental improvements will not give us the security we need; instead, the Federal Government needs to make bold changes and significant investments in order to defend the vital institutions that underpin the American way of life.

We believe...

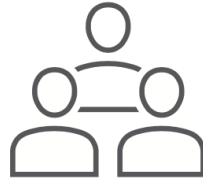




150⁺
research
publications in
Academic Year '23



25
Faculty



50⁺
Ph.D. students



1st
transdisciplinary
master's degree
in cybersecurity



1100⁺
enrolled in
master's program

U.S. News Best Colleges 2024

Georgia Tech is #10 in Top Public Schools

Programs & Rankings

Artificial Intelligence: #5

Computer Systems: #7

Cybersecurity: #2

Data Analytics/Science: #6

Game/Simulation Dev: #4 *(new category)*

Mobile Applications/Web: #7 *(new category)*

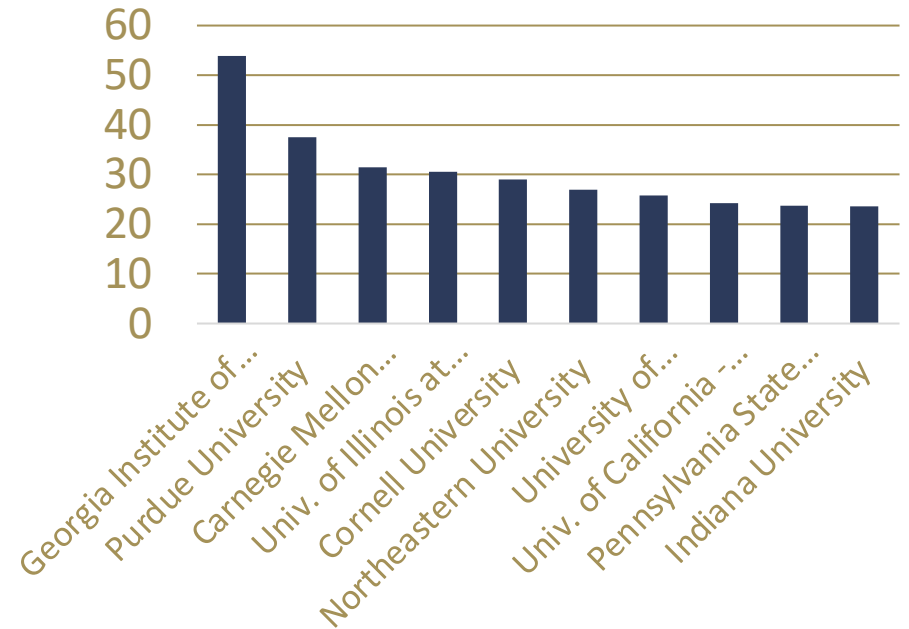
Programming Languages: #14

Software Engineering: #3

Theory: #11

#6

Undergraduate
Computer Science Program



Public Policy

**International
Affairs**

**Computer
Science**

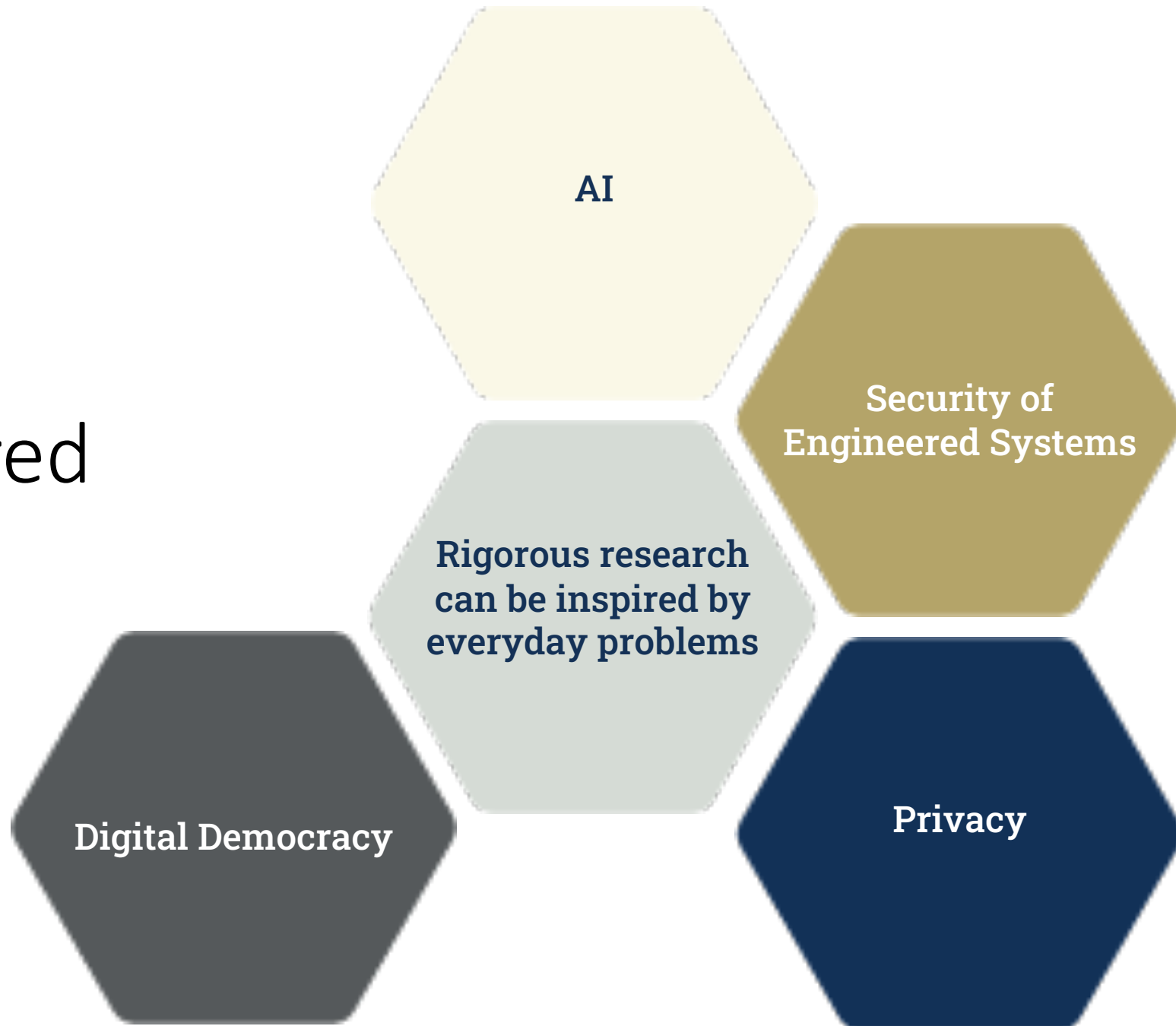
**Societal problems
require
multidisciplinary
solutions**

**Electrical and
Computer
Engineering**

**Connections:
Nuclear, ISYE,
Psychology, ...**

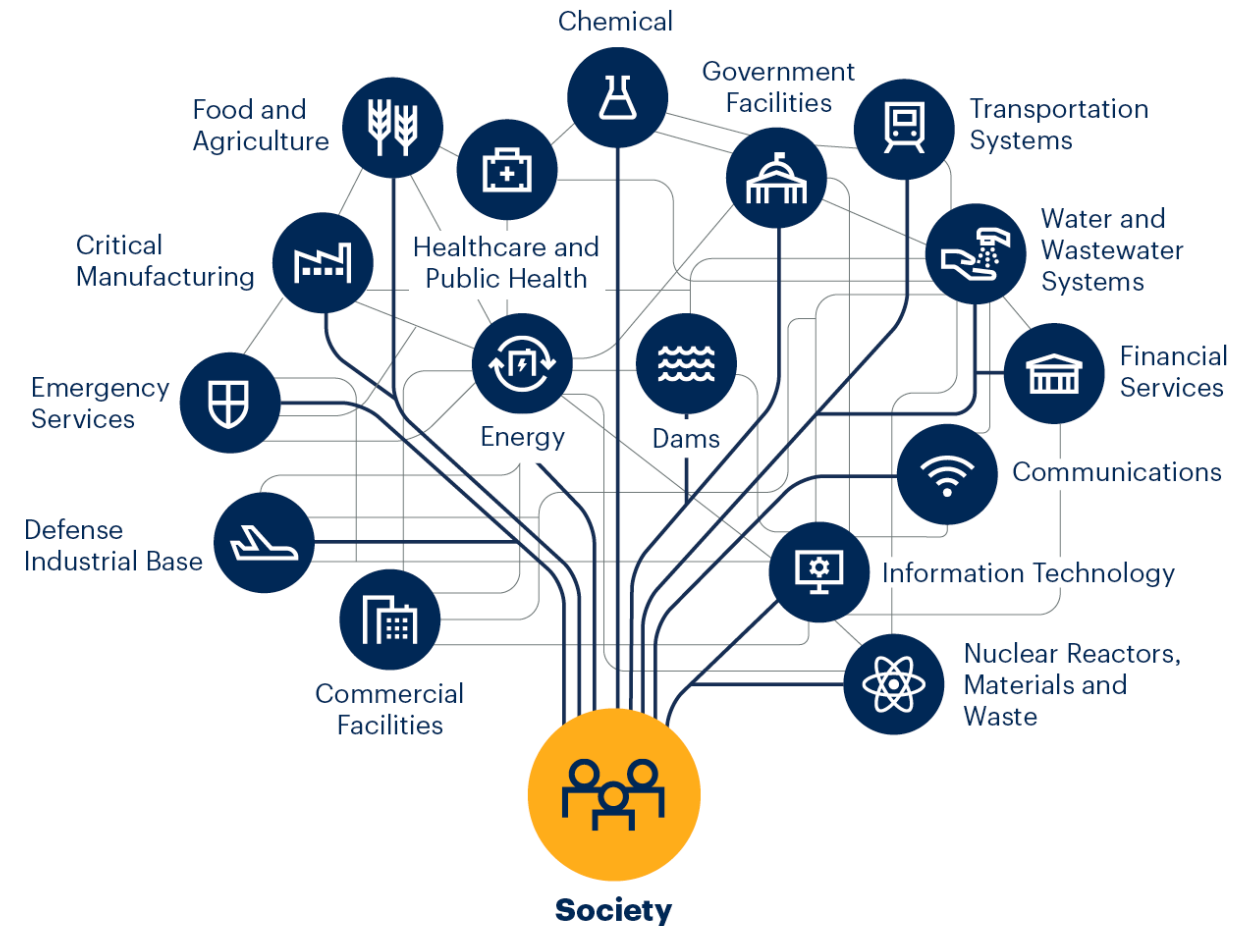
Multidisciplinary

Use-inspired Research

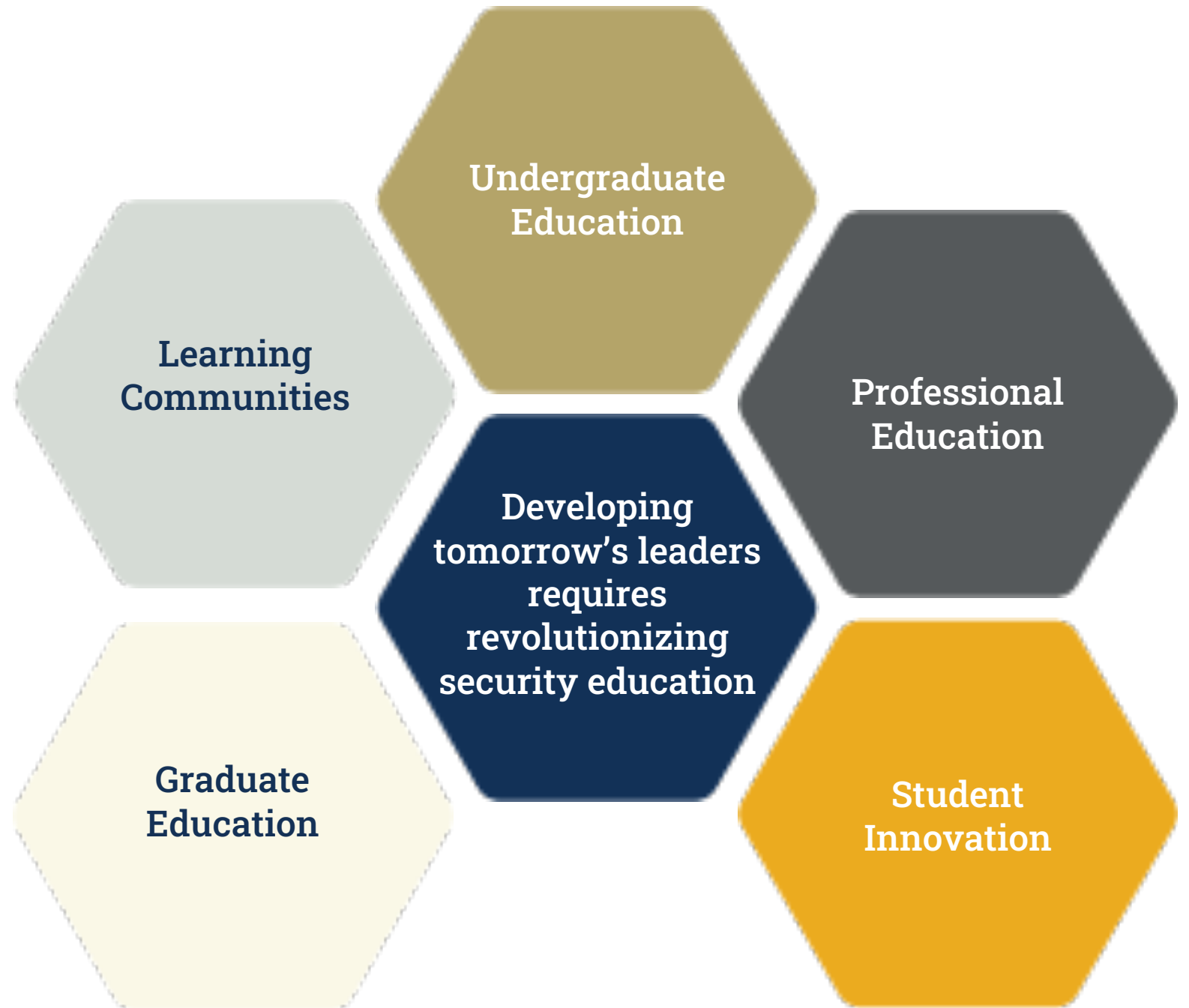


SES: Security of Engineered Systems

- **SES** the GaTech strategic vision for resilience of critical infrastructures
 - *joint resilience consideration across sectors*
 - *security-built-in engineering solution design*
- **SES/AI** broadly defined as SES/AI for security and the security of SES/AI
 - *Interaction of conventional control theory and data-driven control*
 - *Better understanding of ML models and their effects on system behavior*
 - *Specification and verification of datasets and ML-based controllers*

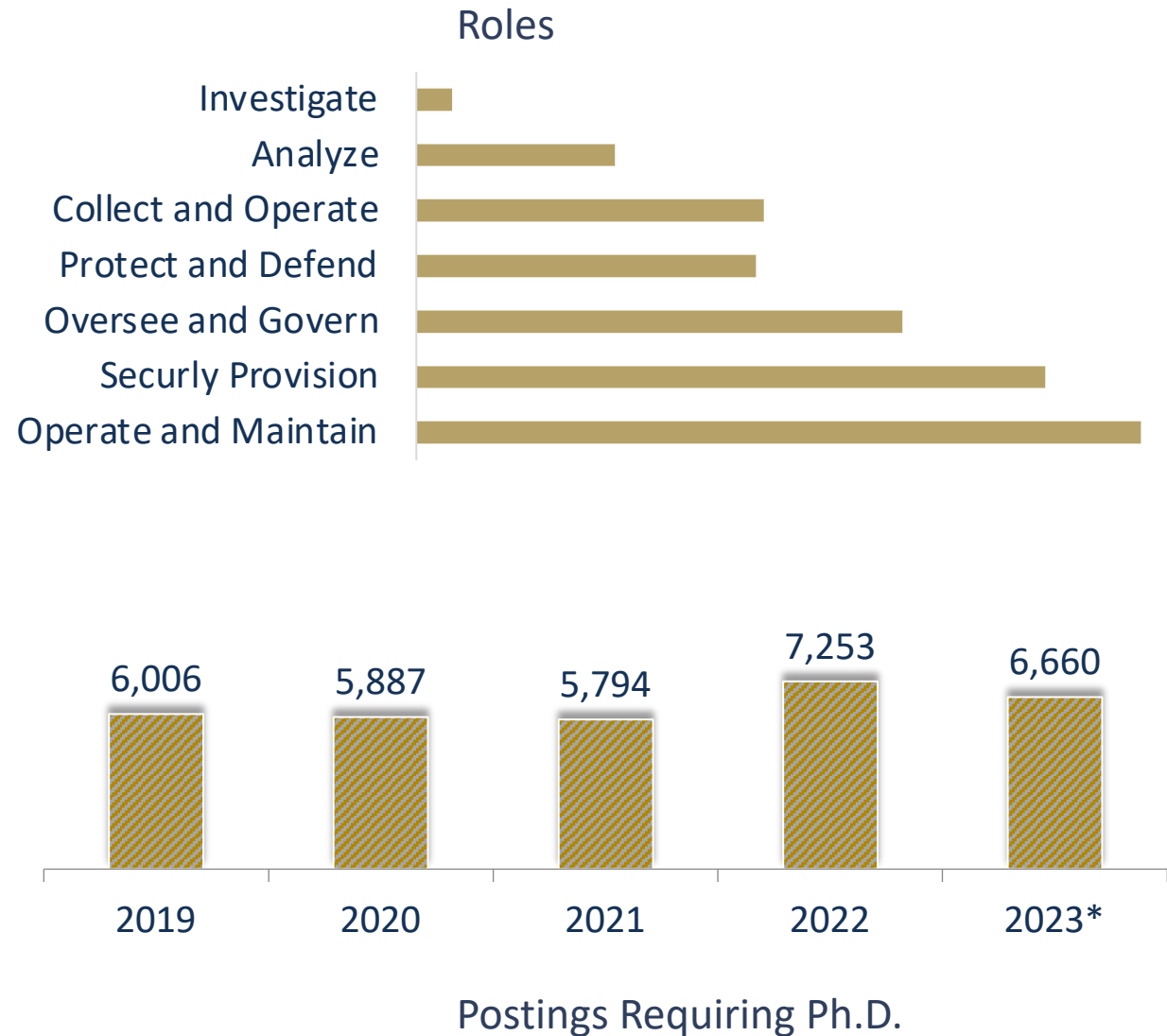


Education Initiatives



Industry Demand

- Openings
 - 572,392 Nation-wide
 - 18,926 State of Georgia
- Wages
 - \$112,000 Median annual salary
 - \$11,470 (11%) premium over computing
 - highest 10% earned \$174,540
- Growth
 - 32% 10-year
 - 2.28x higher than computing



Developing tomorrow's leaders requires revolutionizing security education

Student Innovation

Student Innovation

Georgia Tech Vertically Integrated Projects

Teams About Students Faculty Staff Support Innovation Show

80+ Teams

VIP Vertically Integrated Projects

Team Spotlight

Quick Links

- Peer-evaluations
- VIP teams and students: Share Your Good News!

News and Events

- University of Strathclyde wins 2023 International VIP Consortium Innovation Competition

NEW Team: Health Care Consolidation Project

2D Heterostructure Synthesis

3D Printing on the Nanoscale

ACT Driving Simulator

AI-based Discovery and Innovation

AVA Digital Human



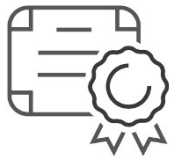
2019 ABET Innovation Award

Presented to the VIP Consortium for community-building around and dissemination of the Vertically Integrated Projects model, a scalable, cost-effective approach to undergraduate research adopted by 35 colleges and universities in the US and abroad

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Professional
Education

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MS Cybersecurity program – CPS track

- Critical Infrastructure Security,
- Introduction to Cyber-Physical Systems Security,
- Cyber-Physical Design and Analysis,
- Power Systems Control and Operation,
- Computational Aspects of Cyber-Physical Systems,
- Cybersecurity of Drones,
- Introduction to Cyber-Physical Security in Electric Energy Systems,
- Hardware-Oriented Security and Trust,
- Power System Protection,
- Autonomous Control of Robotic Systems,
- Side Channels and Their Role in Cybersecurity
- ...

Undergraduate Education

Undergraduate Education

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Security & Privacy



Devices



Info Internetworks



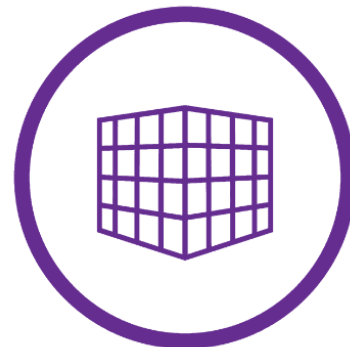
Intelligence



Media



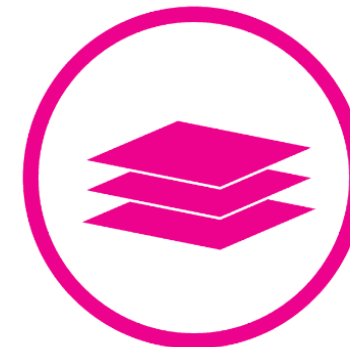
Modeling & Simulation



People



Systems & Architecture



Theory





Learning
Communities

Learning
Communities

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Georgia Tech and University of North Georgia
Run Away with National Cybersecurity
Competition

Example: Cybersecurity of Drones

- Cyber-Physical Systems
- Drone Security
- ArduCopter controller
- **Sensors and MEMS**
- Communication **protocol** security
- Kinematic coordinate frames
- **Kalman filtering** & estimation
- **Dynamical** system modeling
- Firmware **reverse engineering**
- Logic bomb malware dev & analysis
- **GPS spoofing** and false data injection
- **Physics-aware malware**
- **AI-enabled perception** and control
- 15 Research paper presentations





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