



EXPLORERS

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THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

George Washington University

Department of Electrical and Computer Engineering



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George Washington University is a research university consistently ranked as one of the most prestigious universities in the US, and one of the wealthiest in the world. GWU provides access to leading international institutions and multinational corporations.

GW's **Department of Electrical and Computer Engineering (ECE)** work together to explore solutions that will help: develop photonic computing; create state-of-the-art advances in high-performance computing; improve the reliability of cloud computing; create better sensors to detect harmful biological and chemical agents; create and develop energy-efficient and environmentally friendly magnetic refrigeration systems, among many other efforts. An introduction to the department is available on the [ECE Quick Facts](#) page.

READY FOR:



OPEN IDEAS



x2 CHALLENGES

Researchers

Innovators

3 / 6 months

A NGI initiative



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 825183.

Partners





CHALLENGE #15 - GWU-HYPER-01

→ Building Hyper-scale Data Centers

GOALS

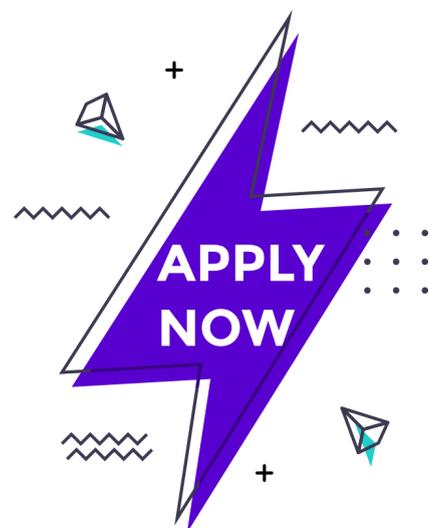
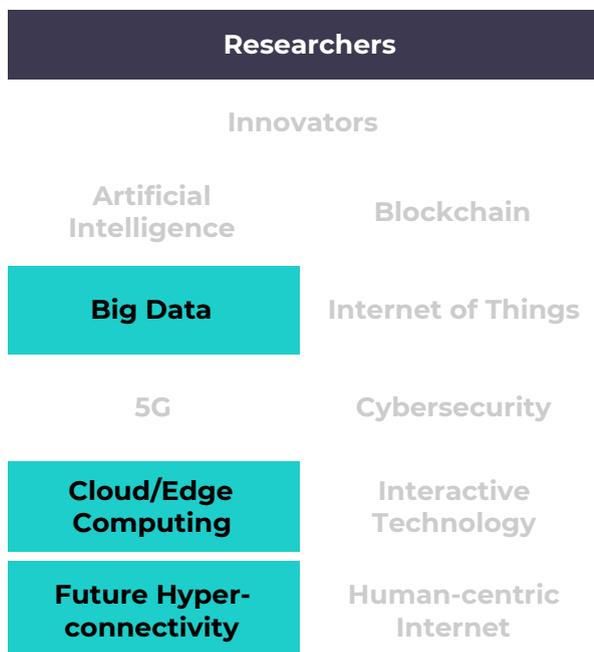
Develop architectures for hyper-scale data centers and illuminate trade-offs between cost, complexity, performance, scalability.

DETAILS

Future hyper-scale DCs are expected to have more than a million servers with access rates per server approaching 100 Gbps. Developing cost-effective and energy-efficient architectures that scale is the main challenge.

SKILLS REQUIRED

Knowledge of network architectures, switches, optical networking, optimization and analytical modeling, simulations.



→ READ THE GUIDELINES



CHALLENGE #16 - GWU-IOT-02

→ Accelerating IoT with edge/cloud computing

GOALS

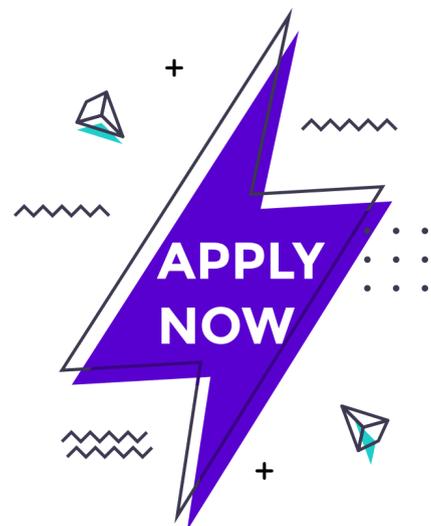
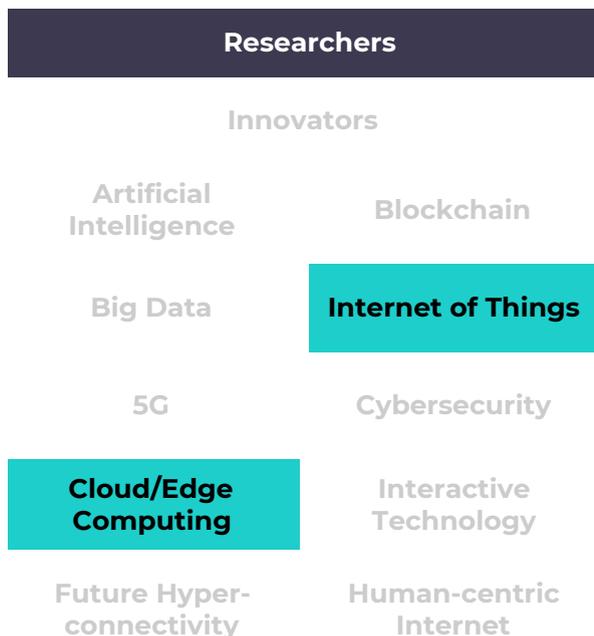
Develop algorithms and build prototypes for enabling edge/cloud processing for IoT applications.

DETAILS

IoT sensors and actuators for applications including smart cities, connected vehicles, disaster recovery, etc. are emerging. At the same time, micro data centers at the edges of the network that process the data closer to the source are also beginning to emerge. The goal of this challenge is to develop algorithms for collaborative data processing in the end devices, edge DCs and the cloud DC to meet the goals of latency/timeliness and energy efficiency.

SKILLS REQUIRED

Knowledge of edge computing, programming smartphones, simulations.



→ READ THE GUIDELINES