Request for Technology Fee Funds: FY20
NOTE: A separate request should be made for each initiative.

I.

Department Number/Department Name: | **360** | **College of Computing**

Title of Request *(please be brief):* **Virtual Machine Expansion to Support Machine Learning and Networking Courses**

Amount of Request *(formula from detailed budget below):* | **$33,404**

Type of Proposal: Atlanta or Dist Lrng/Non-Atl | **Atlanta**

Was this project request funded in FY19? | **No** | **(Yes or No)**

Are there installation/renovation costs associated with this request? | **No** | **(Yes or No)**

If "Yes" then indicate the source of approved funding:
(Note: Tech Fees are not allowed for installation/renovation)

Executive Summary of Request (100 words or less):

Due to aging hardware, we propose to purchase 4 servers to add to the College of Computing's existing virtualization infrastructure to support the Machine Learning 4 Trading and Networking courses, whose associated hardware is either already or will imminently be out of warranty.

Specific class and/or lab initiative(s) if applicable:

Contact person for this request (incl. phone #): | Andrew Leonard (404-385-2805)

Responsible faculty for this request (incl. phone #) | Tucker Balch, Constantine Dovrolis

Indicate priority per department if applicable: | Number ___ of ___

Indicate priority per college or unit: | Number **9** of **9**

II. Impact on Students - Provide course title, course number, and anticipated enrollments:

Titles/Numbers of Course(s) | see below

Anticipated Enrollments

Graduate:	*531*	(per yr	) sem or yr
Undergraduate:	1,392	(per yr	) sem or yr
Total:	1,923		

The estimated percent use of the resources in the item by:

Students	95%
Faculty	5%
Other	
Total:	100%

Brief explanation of how estimate was achieved.

Course enrollments were attained for Summer 2018, Fall 2018, and Spring 2019.

NOTE: Other impacts on students should be described in narrative to include benefits to the students affected.

III. Detailed Budget - Requested Items by Category *List separately any equipment, software, and other allowable expenses (see Tech Fee Guidelines). There is a formula in the "total column" that multiplies the number of items times the unit price. You may enter a figure into the total column if the unit pricing is not applicable. If you need additional rows, contact the Budget Office to receive a modified form. Software or data license proposals should indicate how many years the item has been funded through student tech fees in narrative.*

Supporting documentation is required- *Include price justification in some form, such as quotations, published price lists, etc. as a separate PDF attachment. All supporting information should be in a single PDF.*

	Proposed Number of Items	Estimated Price per Unit	Total ($)
Relion XE1112 Server	4	$8,351	$33,404
Total *(linked to the total amount of request line above)*			$33,404

Please return form via e-mail in Excel format to: techfees@business.gatech.edu. Supporting information only in a PDF file.

IV. Narrative - Provide narrative justification for your intended use of the technology fee funds. Include narrative on how the education or research of the students will be enhanced. To include curricular, co-curricular, and extracurricular benefits expected to accrue to students through provision of this resource, including students outside the unit. Briefly state how information regarding similar technology use elsewhere on campus to benefit from lessons learned, to standardize, or differentiate, and to avoid duplication. Also include how the request aligns with the Strategic Plan of Georgia Tech.

Impacted Courses: CS2200, CS3251, CS4646/7646, CS4675/6675, CS4725/6725, CS6035, CS6262, CS6727, CS7260

The College of Computing maintains a large virtualization cluster to better distribute resources in a scalable and redundant manner. Virtualization results in significant overall equipment savings by allowing better utilization of a pool of physical servers and minimizing unused computing cycles. Virtualized server environments are also easier for technologists to manage, resulting in higher server availability and flexibility to accommodate specialized faculty requests. With this increased flexibility and agility, we gain the ability to provide more resources to students in a collaborative manner. Virtualization plays to the heart of the the Institute's Strategic Plan objective to "establish best business and administrative practices", maximizing the work that both the equipment and those supporting it are able to do for the cost. Regularly adding new machines to the cluster is critical to ensure that we can adequately adjust to increased demands as well as more responsibly phase out older servers that are no longer under warranty allowing us to ensure top performance for these critical services.

As single-use hardware ages, such as the buffet cluster used for CS4646/7646 - Machine Learning 4 Trading, the College has been slowly moving these servers into the existing virtualization cluster. As mentioned above, virtualizing these servers allows us to stretch our investment and support dollars, while providing the same level of performance. We propose to purchase 4 servers to be added to the VM infrastructure to allow the migration of the Machine Learning 4 Trading and Networking courses from aging hardware.

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