Materials, Services, Facilities and Technology Fee
Fiscal Year 2018-2019 Budget Request Form

DUE: Friday, January 19, 2018

If you have questions about this form, please contact Gina Matibag at (805) 437-3320
For additional information please consult the MSFT web page

Application

Project or Activity Title

Algorithms and Cybersecurity Research in Computer Science

Requestor

Michael Soltys-Kulinicz

Requestor Phone Number

8054373713

Requestor Email

michael.soltys@csuci.edu

Amount of MSFT Funding Requested

53817.16

Date Funding Needed by

August 1, 2018

Are you a member of the Division of Student Affairs?

- (●) No
- ( ) Yes

Please select your AVP/Dean

Meriwether, James H - Interim Dean of Arts & Sciences

Will you receive funds from any other source(s)?

- (●) No
- ( ) Yes

Has this project or activity previously received MSFT funding?

- (●) No
- ( ) Yes

Please describe how the use of MSFT funds for this project or activity will benefit the CI student body.

Please provide the following in your application. You may attach additional files as needed (applicants may be requested to meet with the committee to discuss proposals)

1. **Brief Project Description**
   Describe the project and its benefits to the educational or co-curricular experience of students at CI. Please provide specific information about how MSFT funds will be used and their impact on the campus. Please describe how this project benefits CI students? Please describe items and provide justification if your request includes the purchase of computers, equipment, furniture or other materials. Please provide a timeline for implementation of the proposed project. If physical improvements are requested please describe need, scope and impact of work to be completed. If the project includes provision of services please indicate the type of service, personnel costs and level or quantity of service to be provided with project funds.

2. **Project/Activity Budget**
   Please enclose a complete detailed budget of the entire project. Indicate specific items of requested MSFT funding including (where applicable) a schedule and priority of project items to be considered if the project is funded at a reduced level. Were other, less costly, approaches considered when preparing the budget for the project? Are there elements that could be eliminated or deferred if funding is not available for the entire project?

3. **Project Assessment**
   Describe how the effectiveness of the project will be assessed and measures that will be used to determine if it has attained its objectives. Please note a report will be due at the end of the semester (or fiscal year for annual projects). If funded, how will the project acknowledge the use of student funds so that students are aware that their student fees made (or helped to make) it possible? If appropriate, indicate how the project or activity promotes sustainability at CI.

4. **Sources of Project Support**
   Please list the other sources of funding, and additional support for the activity. If this project or activity has been conducted previously please indicate how it was funded. Please explain if MSFT is the only source of support for the project.

Brief Project Description

There is a substantial number of undergraduate students in Computer Science who undertake serious research as part of their course of studies. This research takes place under the aegis of their Capstone (COMP 491,499), or Directed Studies (COMP 497), or Independent Studies (COMP 494), or Internship (COMP 492). Such research requires serious computational resources, to run simulations in Cryptography or experimental results in Algorithms. We have an ingenious and well-working approach to meet this need: a combination of AWS (Amazon Web Services) which offers hardware as a service at a minimum of cost, and the laptops in order for the students to be able to access AWS from anywhere (not necessarily CI labs, but home, coffee shop, or during their commute). Many of our students do not have the resources to purchase laptops that work well with AWS. Thus we are requesting funding to buy a 12 laptops that will be issues on loan to students while they are conducting research, and to pay for AWS services for a year. This comes to $50,788. We would buy the laptops in the summer of 2018 in order to have them set up and ready for fall 2018. The impact on campus resources will be negligible.

Brief Project Description Additional Documents

Project/Activity Budget

We are requesting 12 laptops of the following configuration:

3.1GHz quad-core 7th-generation Intel Core i7 processor, Turbo Boost up to 4.1GHz
16GB 2133MHz LPDDR3 memory
1TB SSD storage
Radeon Pro 560 with 4GB memory
Four Thunderbolt 3 ports
Backlit Keyboard - US English
Touch Bar and Touch ID

Each of these laptops is priced at: $3,651.43 (tax included). The laptop configuration can be viewed here: https://www.apple.com/shop/buy-mac/macbook-pro?product=MPTT2LL/A&step=config#

We already have departmental AWS accounts (through the efforts of IT) and most of my 12 undergraduate research students this year have used my AWS account to conduct their work (in fact, all of them). Amazon Web Services (AWS) is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality. We use it at CI in order to avoid expensive hardware costs. The cost for my students was about $800/month, and so we are estimating $10,000/year.

Total: 12 * $3,651.43 + $10,000 = $53,817.16

Project/Activity Budget Additional Documents

Project Assessment

Each student project is a limited self contained research project that is given a grade at the end. (As mentioned above, each project is one of the following: Capstone (COMP 491,499), or Directed Studies (COMP 497), or Independent Studies (COMP 494), or Internship (COMP 492).) Here are some examples from this year:
1. Electronic Voting Services, headed in an independent study by Jesus Bamford. This project set up an e-voting scheme that uses weighted voting. It used AWS to deploy a cloud server to manage it.
2. Cryptoanalysis project by Brandon Artner and Ty Danet; this project used AWS and GitHub to implement a "Secret Sharing Scheme".
3. HAAS Cybersecurity, by Zane Gittins, this was an internship at the HAAS company. The student had some access to equipment through the company, but Zane needs to write a Capstone project based on the internship, and he requires AWS and a laptop.
All these projects are given a letter grade at the end, and all of them have deliverables, which often have to be presented publicly (as in the case of the Capstone showcase that CS runs every term). Such presentations will mention that the project equipment was funded my MSFT.

Project Assessment Additional Documents

Sources of Project Support

During 2016/17 we paid for AWS services through our departmental funds, but this is becoming infeasible as Computer Science operational funds are minimal. We have no other sources of support for this project.

Sources of Project Support Additional Documents

Fiscal Management:

Project sponsor's unit or department may be responsible for incurred over and above what is funded through the MSFT. If support is requested for costs beyond initial award, or for use on activities or materials not included in approved proposals, the project sponsor must seek approval from the MSFT committee. The project sponsor will be responsible for managing purchases and transfers of funds related to approved projects.

Please review MSFT web page for information about the fund and its objectives before submitting your application.

Michael Soltys-Kulinicz | Jan 9 2018

AVP/Dean Review

☑ I approve of this MSFT Fee Application

James Meriwether | Jan 19 2018