
Supporting Students: Creating a virtual Tech+Space

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Q Project at UC Merced

Q project's main goal is to create an inclusive learning environment to all UC Merced students, giving them skills to use in the future and in their careers, no matter their major, sexual orientation, gender, origin, race, or socioeconomic status.

Why a Virtual Tech+Space?

- Students of UC Merced face barriers because they come from underprivileged zip codes.
 - Virtually no networking opportunities (Merced, Central Valley)
 - No jobs, no internships opportunities in the area
 - Most students are low income therefore traveling can cause financial burdens
 - Many have part time or full time jobs
 - Learning skills required by jobs/internships is difficult since those skills are not taught in school
 - Computer Science != Programming != Software Engineer
 - Skills: (Frameworks, computer languages, or software stacks)

Why a Tech+Space

- Without mentorship or tutorship learning technical skills require large amounts of time finding tutorials, searching the web, and going to large amounts of documentation.
 - Solution: A Tech+Space - A place that provides mentorship/tutoring, access to hardware, and financial support.
 - Hire UC Merced undergraduate students that have possess knowledge of the latest technologies as mentors/tutors.
 - Undergraduate students teach their peers a new skill.
 - Reduces financial burden on students.
 - Allows both student and mentors/tutors to develop their technical skills.
- It's not something new. The Math Center and PALS have helped many students academically.
 - Where is the inclusivity UCM prides itself with?
- Currently CSE students are not receiving the support they need.

Does UCM support underserved, underprivileged students?

No. UCM students can not compete because of lack of support from the University. Computer Science is very competitive.

- Low income, first generation, underrepresented ,full time work, full time study, underprivileged are expected to have this skills. (Skills not taught in class but required by employers)
 - Time is not a luxury for underprivileged students.
 - Students face food insecurity and must work in order to pay their bills and meet their basic needs.

<https://www.usnews.com/news/stem-solutions/articles/2017-05-25/low-income-students-nowhere-to-be-found-in-stem>

Required Experience & Skills

- Strong collaboration skills, a knack for problem solving, and willingness to learn is of utmost importance.
- Experience with Python, NodeJS, Golang
- Familiarity of cloud compute and virtualization environments such as: VMware ESXi, Amazon Web Services Microsoft Azure, IBM Cloud.
- Familiarity with development and consumption of API's, web services.
- Familiarity with front-end development: HTML, CSS, Javascript, etc.
- Computer Networking experience is a strong plus.
- Good written and verbal communication skills
- B.S. Computer Science, Computer Engineering, Software Engineering, Electrical Engineering

**Source: IoTium - Software Engineer
(Recent Grad)**

About UC Merced

UC Merced has the highest percentage of **first-generation students** in the **UC** system — more than 73 percent, which is double the national average

- UC Merced is mostly composed of low income, first generation, hispanic, underserved, underprivileged students.
 - UC Merced prides themselves in having such students, however it provides virtually no support.
- <https://www.ucmerced.edu/fast-facts>

Barriers students face

- Networking has become substantially difficult due to covid19
 - Solution: Provide funds to students that want to attend virtual conferences
- Interview Practice
 - Give students access to leetcode premium
 - <https://leetcode.com/students/>
- Mentors/Tutors
 - Hire mentors

Solution: Promote the career center

- Many students don't know we have a career center

Networking

- During a regular school year students meet and network with each other.
 - Solutions
 - Q project will hold virtual conferences,
 - Funding for conference students want to attend. Open to everyone.
- Can the career center connect us with tech companies?
 - Directly with Recruiters? (Zoom call)
- Can the career center provide financial support?
 - I.e. for conferences, virtual events

Tools

- Online platforms such as leetcode premium.
- Hold mock interviews
 - How can the career center help?
 - Brian O'Bruba has set up mock interviews but not many people know about this. Expand operations?
 - Technical interview questions using leetcode premium.

Mentorships/Tutors

Barriers:

1. Currently there is no mentorships to undergraduate computer science students.
2. Students that want to learn a new skill don't have anyone for support.

Solutions:

- Create a virtual Tech+Space
- Hire student mentors for specific skill sets
 - Success Student Mentor? Program exists but not targeted towards skills but rather adjustment problems for students

Creating a virtual Tech+Space

1. Currently there is Math Center and PALS but not a place that supports Computer Science students directly.
 - a. A place where students can learn new skills
 - i. Skills not learned in class
 - b. The Math Center and PALS hires tutors
 - c. Hires students to teach new skills
 - i. A new software stack ? New programming language?
 - d. Give access to hardware
 - i. Q project has hardware, however because of the pandemic
 1. Solution: Ship hardware to students

In conclusion, Students work on projects, receive mentorship/tutoring, learn new skills, connect with tech companies and build their portfolio and resume.

How can you help ?

- What services and resources can your department provide
 - Provide financial support
 - For conferences
 - To give access to hardware to students
 - To hire mentors/tutors for our virtual Tech+Space
 - Connect us with tech companies
- Help establish a Tech+Space

Cost Analysis

- Cost for Students ~\$1000-3000 per month per student
 - Provide financial support ?
 - For conferences?
 - To give access to hardware to students? ~\$5000
 - To hire mentors/tutors for our virtual Tech+Space
- Cost for Physical Tech Space
 - Reuse an open space at UC Merced which is not being used. COST: FREE
 - Build a separate structure or rent a space downtown
 - There are Multicultural Centers why not STEM Centers
- Establish Virtual Tech+Space
 - Hire mentors/tutors
 - Location: Anywhere

Questions

- Where is the inclusivity UCM Prides itself with?
- Will UCM take action towards being more inclusive?
- Will UCM support it's students?