News From
STEMVision Inc.
Empowering the Next Generation in STEM

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Back to School Campus

By: Arko Ghosh

This year as summer ended, I was excited to be "back to school". Buying graphing papers or replacing the T3 graphing calculator with a new one never felt more exciting. While the first few days were rough with the early morning commute and increase in COVID cases, I felt more comfortable toward the end of your first week on campus- it brought back a sense of belonging. My school is my nest where I'm the most "me." I wake up much happier, more attuned to my routine, and I am surrounded by friends who make me feel excited to start the day.

While online learning was good, I just carried on with my day with no specific emotion. The hardest part about online education was staying interested and motivated. That said, on the positive side, I've gained skills in handling procrastination and sticking to a schedule.

Now I feel like one of my third-grade students, Abhi K, who shared that he eagerly awaited when he can return to the classroom and see his teachers, friends, and the classroom pet gerbil.

Aarush and John are enjoying the freedom and academic rigor of the college campus. Anika is now in high school – a new school and new environment was a exploratory start for her, but she was resilient and is steering well in her new school.

STEMVision is not a new kid in the block anymore – we are in our infancy but strong and steadfast - we have sustained and have forged ahead with STEAM classes. We had an extremely busy summer 2021. With prompt communication and intense collaboration, our team has reached an international audience. Our squad is growing, with David and Megha taking the lead to teach new courses. Yacoub and Camille from our France team were MOST popular for their French classes - I still think it's the accent that made them the celebrity. In addition, we, as a team, are defining our roadmap and brainstorming new ideas to make our courses engaging. I am an eternal optimist who is also realistic, and with my friends at STEMVision, we are steering our conversations to a place of positivity.

The depth of grief this pandemic has brought is not lost on us. Millions of people, including countless students, have lost loved ones to this disease. Yet, amidst the perfect storm, we have endured and marched forward.

We are thankful to our partners and patrons for their steadfast support, dedication, and expertise.

Our Impact to Community Success

- **Total Number of Courses: 34**
- **Total Number of Participants: 2,477**
- **Website Visitor: 11868**

Our Team (as of September 2021)

Anika Prasad, Megha Manoj, Jon Santmyer, Aruna Harpalani, Nandini Iyer, Isha Kapoor, Emily Baker, Camille Frank, Yacob Zitouni, Ayush Gupta, Devanshu Gupta, Swarnima Prasad, Abhishil Prasad, Arko Ghosh, & Aarush Prasad
Aayudesh Kaparthi (guest tutor)

An Article for Everyone

Robotics in Medicine

Converging technologies and global competition are driving the explosive growth of robotics development across a variety of industries. As a result, companies today need talent with the right combination of technical and business skills to harness the massive power of automation and integrated robotics solutions. Medical robotics is one notable field - from minimally invasive surgery, targeted therapy, prosthetics, and home assistance.

Using the daVinci system, some operations can be done with just a few tiny incisions and utmost precision, which means minor bleeding, faster healing, and a reduced risk of infection. And while daVinci has been around for almost eighteen years now, it's more advanced innovation had been linked with Computer Vision, Artificial Intelligence, and leveraging its autonomous features.

At the MIT Biomechatronics lab, researchers have created gyroscopically actuated robotic limbs capable of tracking their position in three-dimensional space and adjusting their joints upwards of 750 times per second.

Creating fully implantable robots that replace or restore physiological processes is a tremendous challenge in medical robotics. Restoring blood glucose homeostasis in patients with type 1 diabetes is particularly interesting in this sense. Intraperitoneal insulin delivery could revolutionize type 1 diabetes treatment.

An endoscopy is a procedure where a tiny camera on a long wire is inserted into the body through a "natural opening" to search for damage, foreign objects, or traces of a disease.

While most existing clinical robotic systems generally operate in an assistive capacity, a grand challenge of medical robotics is developing surgical and interventional robots that exhibit the highest degree of autonomy.

Photo Credit - Modular Prosthetic Limb https://robots.ieee.org/robots/mpl/

Reference - Alexander, D. (2020). 15 Medical Robots That are Changing the World. Interesting Engineering.

Snap! Crackle! Brainteaser!

Using only addition, add eight 8s to get the number 1,000.

Answer: 888 + 88 + 8 + 8 = 1,000