IEEE SMC 2017 Brain Hackathon Student Competition

Call for Participation

The IEEE SMC Society is seeking talented undergraduate and high school students with a passion for developing novel brain technology for the IEEE SMC 2017 Brain Hackathon Student Competition. In October 2017, the IEEE SMC Society will hold the IEEE SMC 2017 Brain Computer Interface Hackathon, where academic and industry professionals will work on small teams to rapidly develop new systems and applications that link brains and computers using existing commercial technologies (including headsets that measure brain activity, mobile and cloud computing, virtual/augmented reality devices, and much more). Teams work together over a period of two days to design, build, test, and present their brain-computer interface systems.

This year, each brain hackathon team, normally consisting of 4-5 members, will have a seat reserved for an undergraduate or high school student. High school and undergraduate students wishing to participate will submit a written application to the IEEE SMC 2017 Brain Hackathon Student Competition for the chance to win a spot on a brain hackathon team. This unique opportunity will provide winning students the chance to rapidly prototype new brain technologies on small teams with academic and industrial professionals.

What's a Hackathon? Hackathons are brainstorming and collaborative marathons designed to rapidly produce working prototypes. Conventional hackathons typically bring developers and technologists together over 24, 36, 48 or more hours to cram and build solutions that they can present.

What's a Brain Computer Interface? A brain computer interface (BCI) is a computer-mediated communication pathway between a person's brain and one or more external devices. BCIs typically use one or more sensors to measure brain signals which are then processed in order to direct an activity (for example, controlling a robotic device or communicating via text or audio), or to augment a system with information about a person's cognitive or affective state.

Why Participate in the Student Competition? Participating in the IEEE SMC 2017 Brain Hackathon Student Competition gives students the chance to win a seat on a team in the IEEE SMC 2017 Brain Computer Interface Hackathon. This unique opportunity will provide winning students the chance to rapidly prototype new brain technologies on small teams with academic and industrial professionals. These students will flex their creative problem solving skills with experienced mentors from a diverse set of fields while receiving exposure to commercial brain technologies that they may not otherwise have the opportunity to use.

Who is Eligible for the Student Competition? Students who will be enrolled at the high school or undergraduate (pre-Bachelor's) level as of October, 2017 are eligible. All eligible students are encouraged to apply, especially women and underrepresented minority students. Students need not have prior experience in brain technologies; a strong interest in the topic and in collaborative problem solving are all that is needed. *Note: graduate students should apply for the Brain Hackathon directly rather than the Student Competition*.

How to Participate? To participate in the student competition for the chance to win a spot at the brain hackathon, please apply online.

GENERAL INFORMATION

Date: Applications for the student competition are due July 15, 2017. Winners will be eligible to participate in the IEEE SMC 2017 BMI Hackathon on October 7-8, 2017.

Application: Apply online.

Participants: High school and undergraduate (pre-Bachelor's) students enrolled as of October, 2017.

Prizes: Winners of the student competition will be eligible for participation and partial travel support ($100-$500 depending on available funds) for the IEEE SMC 2017 Brain-Computer Interface Hackathon in Banff, Canada, October 7-8 2017. More information about the Hackathon may be found here.

Sponsor:

- IEEE SMC Society

- **Technical Co-sponsors:**

- IEEE Brain Initiative, IEEE Computational Intelligence Society, IEEE Magnetics, IEEE Consumer Electronics society, IEEE Systems Council

JUDGING CRITERIA

The following judging criteria will be used to select winners of the student competition:

INTELLECTUAL MERIT

- Has the student been successful in their coursework, especially in advanced coursework?
- Does the student have experience in one or more areas relevant to the Brain Hackathon? (e.g. neuroscience, brain technologies, engineering, software programming, robotics, AR/VR app development, web/cloud technologies, etc.)
- Does the student display intellectual curiosity towards their academic pursuits? Do they try to make connections across different courses and disciplines when solving problems?

PROJECT EXPERIENCE

- Has the student completed large, open ended projects in the past? Did they learn from that experience, even if their objective wasn't met?
- Does the student handle setbacks gracefully? Do they know how to ask for help when they need it?
- Is the student able to discuss the broader contexts of their project (i.e., the "so what?")? Have they thought about the types of problems they would like to solve in the future?

TEAMWORK

- Does the student have prior experience working on team projects, especially with diverse team members?
- Has the student reflected on their unique strengths and weaknesses which they contribute to a team?

ADDITIONAL INFORMATION

For additional information or questions about the hackathon, please contact:

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