

**Minutes of the 09/17/2013 IEEE Tampa Bay RAS Meeting**

(Prepared by Sean Denny, Recording Secretary)

Location: DeVry University at 5540 W. Executive Drive,

Tampa, FL, 33609

Room: 210

Date: September 17, 2013

Time: 6:30pm to 8:20pm

The Tampa Bay Chapter of IEEE’s Robotics and Automation Society held the September meeting at DeVry University in Tampa. The IEEE RAS Chapter plans to execute on the Vision of the Chapter’s Founder, George Schott to “Learn, Do, Teach”.

There were a total of 8 people made of 4 IEEE members, 0 Students, and 4 guests present.

OFFICER ROLL CALL:

o Chairman – Ken Fiallos

o Vice-Chairman/Secretary – Sean Denny

* Treasurer – Tom Hayden-Excused

**CALANDER**

9-21-13 Kick Off Day and Workshops 9- 3 PM HCC Brandon

10-19-13 Mall Day (9-3PM Pre Competition Practice) HCC Plant City

11-1-13 BEST Competition   (Friday Evening) Armwood High

11-2-13 BEST Competition (All Day) Armwood High

OLD BUSINESS:

The Motion to approve the July Minutes as published was made by Craig Ross;

Seconded by Drew Davis.

TREASURY REPORT: Waived

PRESENTATIONS:

1. BEST Robotic Arm Design Considerations

The BEST Competition is spread over November 1-2, 2013 at the Armwood High School Gymnasium. The program is making Robotics accessible to Tampa Bay through a mentoring pipeline. The Focus is to get the kids to design the gears and make in a 3D printer at HCC. Two preliminary workshops precede the competition starting September 21 at HCC Brandon. The Game Theme will be unveiled for the Competition.

Ken led a discussion about the Cylindrical & Articulated Arms. He said “Students will need to draft a workbook of specifications.”

Articulated Arm Prime Considerations:

1. Reach🡪Can it move the object from one position to another?

Can it reach all the tasks? Are the arm lengths optimized (shorter the better) to minimize transit time and less rotation Kinetic Energy (KE). Label the configurations with the degrees and lever arms.

1. Strength🡪 Can it lift the object

We want less rotational torque and electricity the better.

As a 1st approx. use the torque to hold the configuration in place & double the result to compensate for Rotational KE

Check torque along the transit path for all motors With Trigonometer

Torque Calculation Parameters

1. 1’ of 1” PVC Pipe weighs 0.32 lb/ft or 0.64lb for 2’ length
2. AL Sheet 3”x12”x1/16”=2.25 in ^3 x0.0975lb/in^3=0.22lb/ft or for a 2’=0.44lb. Equation: If the output gear is larger than the input gear, the torque increases. If the output gear is smaller than the input gear, the torque decreases. *NOTE: Workshop on Gear cutting on cnc mill at HCC Week of 9/30 TBA.*
3. Speed🡪 Is it fast enough?

ROBOT ARM TUTORIAL WEBSITES

<http://www.Robotshop.com/robot-arm-torque-tutorial.html>

<http://societyofrobots.com/robot_arm_tutorial.shtml>

1. Robofest Advantage: Lends itself to manufacturing

Must find sponsors to help Robofest.

1. Robofest Robot Design Discussion

Drew Davis, St. Pete College Student, is building a robot for Robofest. The robot has to be able to roll up a slanted roof of a burning building. We discussed options on how to position the wheels versus affordability. It was suggested to shop with Hineman for a High-Precision Inexpensive Motor. DARPA Grants are an alternative.

OLD BUSINESS:

Emma Alaba said that the Robofest Thanksgiving RoboParade will be at Thurgood Marshall Middle School on November 9, 2013. Activity is opened for Grades 4th - 12th. If liability insurance is not obtained in time, the event will be relocated to the St. Pete Main Library. The qualifying robots due by 10/26.

Ken Fiallos announced the Electrathon America Foundation will have the First Annual Electrathon National Championship with RPM Motor Sports, ESPN at Coronado Resort at Disney World on December 5-7th, 2013.

We collected $10 in donations.

Adjourned at 8:20pm by Craig Ross; Seconded by Drew Davis.

Respectfully submitted by

Sean Denny,

Tampa Bay IEEE RAS Chapter Secretary

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