



Lego Spike Robotics

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College Park Scholars - Science & Global Change Program

Major: Computer Science & Mathematics

Class: CPSS240 Robotics Service Learning Practicum

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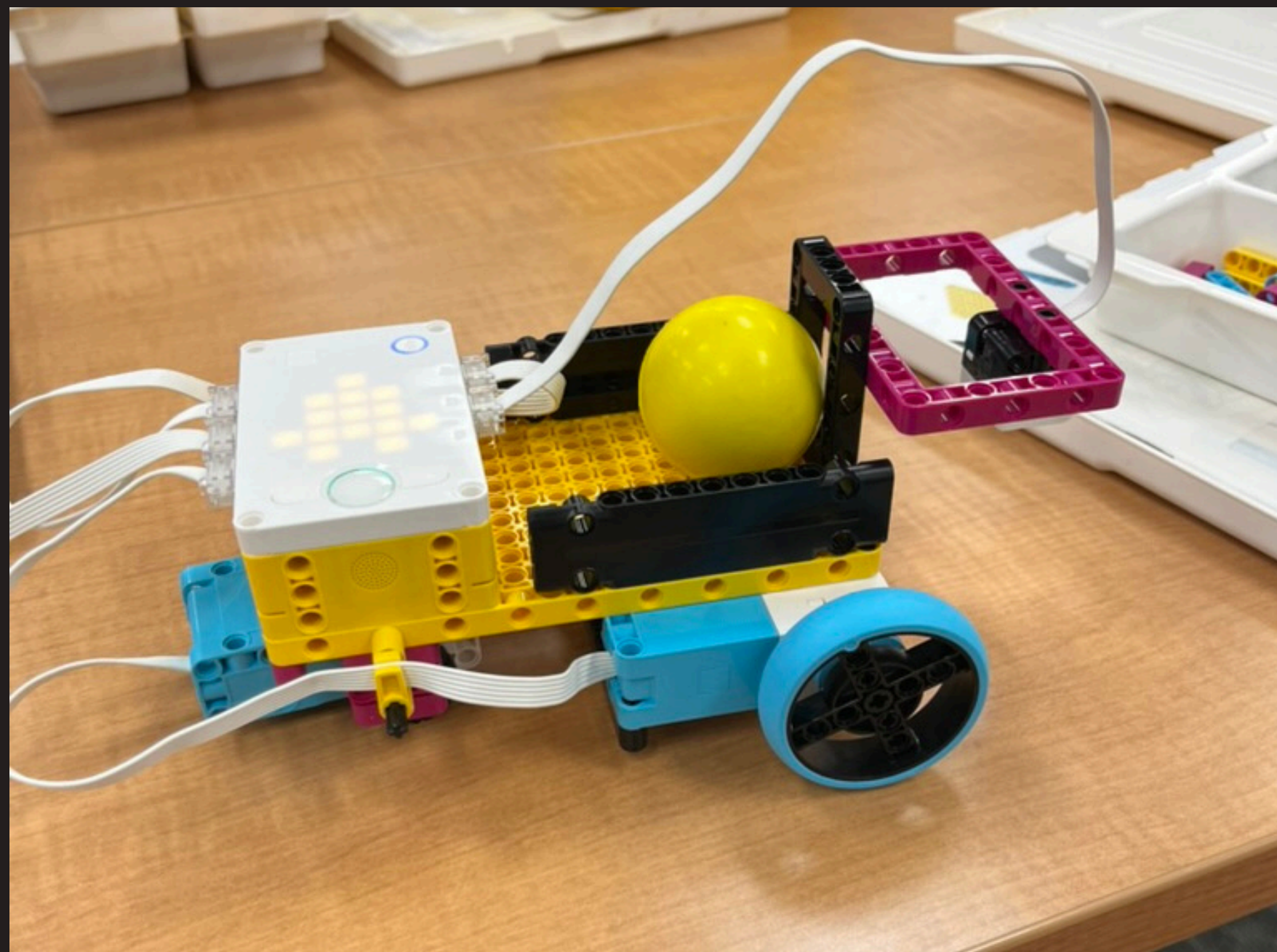


Introduction:

I took the CPSS240 Robotics Service Learning class. This was a full semester class, which entailed 11 weeks of direct collaboration with a Prince George's County Elementary School to teach a robotics course. Students were exposed to different lessons revolving around the different sensors in the Lego Spike Robotics kits to help prepare them for the “Grand Challenge” Obstacle Course in Week 11, in which the students' parents came to see what their children learned this semester.

Impact/Benefits:

- Generate interest in Robotics and STEM education
- Gain confidence in Problem Solving
- Learn how to work with younger students and meet their needs
- Collaborating and working in a team setting
- Insight on the disparities within STEM education



My students testing and designing their Lego Spike robot during the building phase of the Grand Challenge.

Activities:

- Introductions, Ice-breakers, and Team formation
- Lego Hand Grabber (2 weeks)
- Lego Break Dancer (2 weeks)
- Lego Delivery Cart (2 weeks)
- Grand Challenge Obstacle Course (3 weeks)
- Grand Challenge Day!



My Students refining and testing their Lego Spike delivery cart during the testing phase of the Grand Challenge.

Site Information: Cesar Chavez Spanish Dual Immersion School, 6609 Riggs Road, Hyattsville, MD, 20782

Site Supervisor: Ms. Doris Santiago

Site mission: Teach Lego Robotics and help the students design a robot to navigate our “Grand Challenge” obstacle course.

Goal: Teach students the Engineering Design Process of Design, Implementation, Testing, and Revision to build problem-solving skills and foster interest in STEM Education.

Discussion:

I found this to be a very rewarding experience for me and the students, as this is one of the only opportunities here at UMD to teach younger students outside of Terrapin teachers. Many of these students come from lower income families and this is their only opportunity to be exposed to STEM education at a young age.

Issues Confronting Site:

- We were working with diverse students, and it was sometimes difficult to keep everyone interested.
- Students had a very short attention span, and at times it would be difficult to keep them engaged in the lesson
- Some students faced shyness and a language barrier and were hesitant to participate



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Acknowledgments:

I want to thank Dr. Kuan-Hung Lo and Ms. Doris Santiago for organizing this enriching experience with the students. I also want to thank Dr. Holtz and Dr. Merck for making these past two years in SGC memorable and worth it.

