

A close-up photograph of a student wearing glasses and a dark blue shirt, focused on assembling a LEGO Mindstorms robot. The robot is built on a red base and features various sensors, motors, and gears. The student's hands are visible, carefully connecting components.An aerial photograph of the Lawrenceville School campus, showing a large, historic brick building with a prominent arched entrance and a courtyard. The campus is surrounded by lush green trees and a well-maintained lawn.

GoWELL Storming Robots AI Summer Session Robot-to-Robot Remote Control & Automation 2-week Immersion Program @ Lawrenceville School

For 11 to 17 year olds

July 21 to August 3, 2019

Want to work with technologies that create unmanned vehicles?

Want to fully automate robots for a 2-on-2 football player game?

Storming Robots students regularly win top awards at robotics competitions. It has an impressive track record of helping students gain admissions to top U.S. universities, including Stanford, MIT and Cornell.

Learn robot-to-robot wireless communications from the best AI robotics club in the U.S. Whether you are working with VEX, LEGO or Arduino, learn to make your robot "smart"!

Equip yourself with robotic skills to help innovate our world

Program Highlights

- **Opportunity to learn from the best.** International students now have a rare opportunity to join the premier robotics club in the U.S. Storming Robots has a proven track record in equipping its students with advanced robotics skills. Its student teams regularly win top awards at robotics competitions.
- **Full robotics immersion experience.** A full-day program with technical instruction by experienced instructors with hands-on work in small groups. Join a program that is sought after by top U.S. students, gaining an impressive experience that can be shared with college applications.
- **Focus on AI.** Focus on the latest in wireless communications and motion sensing technology working with RobotC® and LEGO® Mindstorms™. The programming knowledge gained is key for advancing a student's robotics skills, regardless of system – VEX, Arduino or others.
- **Live and learn at a prestigious boarding school.** Students are situated at The Lawrenceville School, with renovated dormitory space, SR's extended workrooms, full use of campus and athletic facilities and cafeterias. Lawrenceville is a 10-minute drive from the #1 ranked Princeton University and its beautiful college town.

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Storming Robots

One of the most sought after AI robotics clubs in the U.S. with top students often traveling long distances to be part of the club. For every year in its 10 year history, Storming Robots students have won many awards at global robotics competitions such as RoboCupJunior and ZeroRobotics. SR's founder and head coach, Elizabeth Mabrey, has a master's degree in Computer Science and has been in senior positions in the software industry for over 14 years. In addition to her substantial experience in robotics education, Elizabeth is on the Technical Committee of the International RoboCupJunior Rescue League.

Many SR students have matriculated into the Ivy Leagues. Just this past December, its students received early admissions into Stanford, MIT and Carnegie Mellon. To learn more, please see <https://feedback.stormingrobots.com>.

The Lawrenceville School

The Lawrenceville School is one of the top 4 boarding schools in the U.S. Many of their students gain acceptances into the Ivy Leagues, especially nearby Princeton, and other top ranking universities.

Students will be stationed out of this beautiful, prestigious private school. Students will reside at one of Lawrenceville's popular dormitories and have access to their full campus, including athletic facilities and cafeteria. All Week 1 classes will be on campus at Lawrenceville. Week 2 robotics immersion will be at SR's laboratories.

GoWELL Education

Gowell is a Hong Kong-headquartered education company focused on providing international education opportunities to students. It has established partnerships with leading U.S. universities, such as UC Davis and NYU, so to offer official programs with personal support, ensuring that students receive an enriched and fun-filled academic and cultural experience. Gowell also has a master licence from the ACT to operate their university preparation program, the GAC Program, at any location in China. Gowell is managing the overall logistics of this program.



Highlighted Achievements by SR Teams RoboCupJunior (RCJ) Championships

2018 World RCJ Championship
Montreal, Canada
1st place Algorithms
5th place Rescue Maze Challenge
1st place Teamwork

2018 USA RCJ
1st place Maze League
1st place Line League
1st place OnStage League

2017 World RCJ Championship
Nagoya, Japan
1st place Engineering Strategy
2nd place SuperTeam Challenge
1st place Team Spirit

2017 USA RCJ
1st place Algorithms Award
1st place Documentation
1st place Mechanical Design
1st place Teamwork
1st place Rescue Maze – Open
1st place Rescue Line – Open
1st place Rescue Line – Primary ...

2016 World RCJ Championship
Leipzig, Germany
1st place Hardware Solution

2016 USA RCJ
1st place Algorithms
1st place Electronics Design
1st place Teamwork
1st place Rescue Maze – Open
1st place Rescue Line – Open
1st place Rescue Line – Primary ...

2015 World RCJ Championship
Hefei, China
2nd place – Individual Team

2015 USA RCJ
SR teams won 10 of 17 participated awards
1st place Mechanical Design
1st place Rescue Maze – Open
1st place Rescue Line – Primary

2014 World RCJ Championship
João Pessoa, Brazil
1st place Rescue A – Primary League
1st place Technical Engineering

2014 USA RCJ
1st place Rescue A – Secondary
1st place Rescue A – Primary
1st place Rescue A – Secondary
1st place RoboDance – Primary
1st place Rescue A – Best Robots Design
1st place Rescue B – Best Robots Design
1st place Rescue B – Best Software Design

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Robot-to-Robot Remote Control & Automation

The Course

Aside from daily instruction, students work in groups of two, with daily challenges and mini-competitions. Focus is on the analytical process, problem solving with computer programming and scaffolding software architecture concepts along with proper engineering process.

Students will also attend a symposium with top STEM high school students at the prestigious New Jersey Governor's School of Engineering. They can also join university applications workshops for student STEM.

Elizabeth will lead the summer session. SR's teachers are all fully certified by Carnegie Mellon or similar institutions and the student-teacher ratio at 8:1.

Week 1. Motion sensing projects using Micro Electro Mechanical Systems technologies. Learn programming in RobotC with efficient handling of basic control structures and modularization; program motion sensing controllers and perform wireless uni-directional navigation; explore finite state machines; program with motion sensor accelerometers; and conduct projects with robotic hands.

Week 2. Learn how to communicate using with XBee; perform bi-directional navigation; learn efficient programming interface design (create a single set of library programs to allow cross-platform communications); learn the basics in feedback control (college-level mechanical engineering topics); and conduct projects such as robotics 2-on-2 football.

Tools. Hardware: LEGO® Mindstorms™. Software: RobotC©
Prerequisite. Prior experience with basic programming.



Team SR-OnStage: Susan Lee (Gr.9) and Michelle Bryson (Gr. 10)



What does the student receive?

- Individual engineering logbook
- Online project portfolio site
- Regular updates for parents
- Certificate of completion

Daily Schedule

The Storming Robots Summer Session are full day, immersion programs from 9am to 3pm. On the weekends, students can visit Philadelphia and New York, touring University of Pennsylvania and Columbia University and visiting popular sites such as the Statue of Liberty. All trips are accompanied by resident advisors.

Week 1 Robotic Hand or Vehicle

Date	Activities
Mon	Basics in RobotC programming and the mechanical aspects required
Tue	Mini-robotics projects, Mini-contest
Wed	Design with state machine and implementation, Mini-contest with wired remote vehicle
Thu	Remote communications with Bluetooth technology
Fri	Mini-robotics project, Programming wireless interfaces, Final project involves a robotic hand or vehicle, Final challenge

Week 2 2-on-2 Robotic Football Game

Date	Activities
Mon	Basics in Zigbee communications using XBee, Mini-robotics projects with XBee
Tue	Robotics football Prepare for football robots. Project planning and strategies, hardware design (goalie and kicker robots) and software design
Wed	Robotics football continuation
Thu	Robotics football continuation
Fri	Final contest 2-on-2 robotics football game (goalie and kicker)

Note: The above schedule may be subject to slight changes based on students' progress. Football refers to American soccer.

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Nearby Excursions & University Tours

Centrally situated in suburban New Jersey, students are able to easily visit the major cities and universities on the East Coast. On the weekdays, as Lawrenceville is only a 10-minute drive to Princeton University, students will enjoy a campus tour and admissions office information session at the #1 national university in the U.S., as ranked by *U.S. News & World Report* in 2018.

On the weekends, students can travel to New York and Philadelphia, visiting popular sites such as the Statue of Liberty, Central Park, Independence Hall and Liberty Bell and the Reading Market Terminal. Students will can tour both University of Pennsylvania and Columbia University. All excursions will be led by experienced guides.



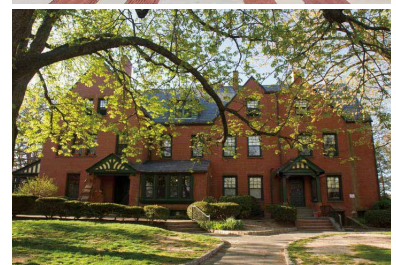
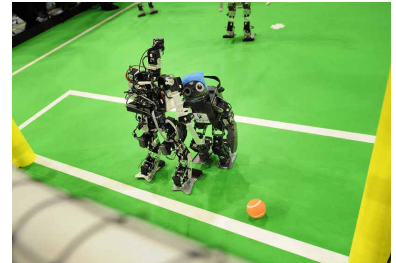
Daily Life at Lawrenceville

Students will have their dormitory, classrooms, cafeterias and recreational facilities all within several minutes walk within campus. Students can use the athletic facilities at any time and dine at Lawrenceville's cafeterias, allowing for a complete boarding school experience.

Right outside the school is a small town in which students can buy personal supplies and run errands accompanied by our resident advisors.

Bilingual Tutors

Students will be accompanied by bilingual teaching assistants in the classroom and resident advisors outside the classroom, helping ensure an enjoyable and smooth experience during the program.



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