



MONKEY BUSINESS

News of The Funky Monkeys, Lynbrook High School Robotics, FIRST® Team 846



Table of Contents

- 1. Presidents' Welcome
- 2. Underclassmen Experience
- 3. Dean's List Award
- 4. 2022 Season
- 5. Outreach
- 6. Where Can You Find Class of 2022
- 7. Upcoming Events

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Presidents' Welcomes



Arjun Kumar (sr.)

Yuvraj Dhadwal (sr.)

I remember when I first saw the SpaceRex, a 5 foot tall, 125-pound metal robot, spinning around and grabbing bright orange balls. My first reaction was: "Are we sure high school students built this?"

By the time 'Build Season,' the 3-month span where we build a new robot, rolled around, I was playing a role in building a just as big and just as complex robot. My parents were perplexed about why I was more excited to go to work sessions than watching a movie with my friends. I couldn't explain it

see Arjun's Welcome, page 2

My first experience with Lynbrook Robotics was at the Miller Hands-On Demonstration in 2019. At this event, I was able to drive the robot and learned about all the different subsystems of the robot as well as all the non-technical aspects of the team.

I was overwhelmed with the sheer size of the club. How could 30 high school students not only build a robot like SpaceRex but also run such a successful club with newsletters, a business team, and photojournals? Although I wasn't confident that I could become 1 of the 30, I decided to join in hopes of finding an interest and learning something new.

Fast forward a few weeks, I was operating machines that were more than 3 times my weight like it was second nature—machining a keychain from scrap aluminum. The experience of working with such large machines was something I had not expected for myself, but here I was and I was loving it!

During the early days of Build Season, I chose to shadow Anna Shaposhnik. This allowed me to get a basic understanding of how the team operated as a single entity

see Yuvraj's Welcome, page 3

Underclassmen Experience

Justin Zhang (soph.),
Abhishek Nambiar (jr.)

Justin: The lively nature of robotics drew me into the FRC rabbit-hole. As a Funky Monkey, I discovered new opportunities and friendships. I frequently found myself interacting with team members I'd never spoken to before due to my introverted personality.

Then came competition time, filled with many amazing, unique teams. I talked with many students from other schools, states, and countries and met one of my closest friends, Richard from MSET Fish from Saratoga High School, through robotics. Watching and cheering for our robot "Furious George" at competitions was electrifying and it was extremely satisfying to see all the work done by my teammates paying off.

So, what can an incoming member expect? As an underclassman, I learned a lot by

see Underclassmen Experience, page 3

Dean's List Award

Nandini Rao (sr.)

I remember sitting down for my interview, nervous and practically shaking in my seat. The next ten minutes were a blur, and when I walked out of the room, I was just relieved it was all over. I was content with the answers I gave to the questions the judges asked me, but knowing the competitive pool of applicants for the Dean's List Award, I wasn't expecting to win.

Regardless, I learned a lot from my experience preparing for the interview. I was able to reflect on my journey on this team and recognize how the work I've done, both technical and nontechnical, has shaped me and helped me grow from the person I was three years ago when I first joined. Though I hadn't even considered pursuing engineering before then, I discovered my passion for it through my work in mechanical design, from the drivetrain to the climber. These experiences gave me the opportunity to apply what I learned in school to a real-life situation and helped me develop confidence in my ability to do so. Now, I don't think there's any career I want to pursue more than something in a field of engineering.

My non-technical experience has allowed me to help our team give back to our community. I'm grateful to have been able to organize events such as visits from the local Girls Who Code branch to inspire more girls to join us, a partnership with the Ohio-based Replay4Kids organization so our

"Now, I don't think there's any career I want to pursue more than something in engineering."

team could help adapt electronic toys to better fit the needs of children with disabilities, and the annual LEGO robotics based program we host at Miller Middle School to introduce their students about engineering. Activities like these have allowed me to see, although on a small scale, the importance of encouraging students to pursue engineering as well as applying it to support our community and future.

I was able to share my story with the judges during the interview, where I talked about my goals for the future and how my work on the team has helped me work towards accomplishing them - organizing outreach activities, building my technical skills, and overall, helping me grow into the



Nandini Rao (sr.) wins Dean's List Finalist.

person I am now. Though I was nervous in the beginning, I quickly became comfortable, even cracking a few jokes with the judges towards the end, and was satisfied with my performance.

More importantly, though, my journey with Dean's List has highlighted the never-ending support that my team has given me these past three years. Being nominated by my teammates and mentors, who are the people I work with the most and who know me the best, is an honor. Their recognition means more to me than the award itself, and their support runs even deeper than that. From Wayne and Mridula, who didn't hesitate to help me learn and teach the team how to solder toys for Replay4Kids, to Mr. G, who has taught me so much about mechanical design, to Yuvraj, who, despite being another candidate for Dean's List at the same competition, helped me prepare for my interview, to everyone else on this team, all the mentors and students I can't possibly list out in one article but won't forget - I couldn't have achieved this accomplishment without their support and encouragement.

I remember walking back to the bleachers after our team collected the Engineering Inspiration Award, just as they were announcing the second and final Dean's List Finalist. I wasn't even looking at the screen, still not expecting anything, and focusing on enjoying the moment we were in having just won another award. And then I remember them announcing my name, before I could even return to my seat. I remember walking to collect my award, in shock, my hands shaking. I remember hearing applause from everyone else in the audience, but the most screaming and cheering I heard, loud enough that I could recognize their voices, was from our team - their support for me strong, like it always has been.

Arjun's Welcome, Continued...

then, but robotics is more than just a club: it's a little home inside of Lynbrook. As a freshman, I quickly found a tight-knit community of other robot lovers. I've made some of my closest friends in robotics, both when racing to fix the robot between matches and while eating dinner during a late-night work session.

When I joined the team, I didn't know what I was interested in. I decided to try dipping my toes into everything. The Funky Monkeys' fall workshops allowed me to dabble in the team's hardware, software, and electrical groups and I quickly discovered my interest in designing and machining. To me, there is something special about being able to think up an idea, model it out on my computer to the smallest detail, walk to our machine shop, and turn the idea into a reality.

Robotics is where you can discover and pursue what you're passionate about. If you enjoy writing, join our grants group, who write to different donors to secure the funding to build our robot and compete. For everyone who loves graphic design, we draw colorful monkey-inspired designs on our robot and shipping container. And to all the people joining the team this year, don't limit yourself to just robots, explore what robotics has to offer you—you might be surprised!

Looking back to when I joined the team three years ago, I never would have expected to learn and grow this much. I was really able to put to use all the math, physics, and even writing skills we'd learned at school. But beyond that, within the pressure of building a robot in just a couple of months, I've learned a lot about time management as well as how to speak up and express myself. I've loved being a Funky Monkey so far, from the moment celebrating our victory at the San Francisco Regional to the painstaking time trying to fix an error message on the screen. I'm confident you'll also be able to discover your place on the team and I can't wait for another great year!



Arjun Kumar (sr.) uses the band saw.

2022 Season

Arjun Kumar (sr.)

Our team erupted into cheer when the final score, 79 to 76, along with “The Red Alliance Wins” in giant letters, appeared on the display. The Funky Monkeys had just won the San Francisco Regional competition—and kicked off one of our team’s strongest performing years yet.

The San Francisco Regional was our first competition of the season (and our first regional in over two years). It was a fun experience for everyone who attended, whether they were in the pits racing to fix our intake, scouting other teams’ robots, or in the stands cheering on our yellow machine as it raced across the field picking up balls or climbing. At the end of the qualification

matches, our team ranked 2nd place. Team 604, Quixilver, selected us, and our alliance eventually won the competition. The victory was our ticket to World Championships a couple months later. We additionally won the Excellence in Engineering award for our innovative intake and climbers and energy-efficient shooter.

We were ready for the Utah Regional with an improved robot. It was the first out-of-state competition for me and a lot of our team. Our team had a lot of fun traveling, trying out restaurants and exploring. It was a tough competition and our team gave it our best effort. Albeit having some issues collecting balls and climbing, we ranked 4th place when the qualification matches ended. With careful deliberation from our scouting team (who had taken notes on the dozens of previous matches), we formed an alliance

with Team 3374, Jackson Hole RoboBroncs from Wyoming, and Team 4388, Ridgebotics from Colorado. Although we were eventually eliminated in the semi-finals, we were proud to win the Engineering Inspiration award, demonstrating our team’s outreach and engineering spirit.

The George R. Brown Convention Center was packed with 450 teams at World Championships a couple of weeks later. It was easy to get lost looking at the endless rows of robots or talking to students from across the world. Our robot had a strong performance in the Galileo Division but a combination of the intense competition and our tough match schedule led us to be one of the lower ranked teams before elimination matches. We were

see 2022 Season, page 4

Underclassmen Experience, Continued...

attending worksessions and the fall workshops that our team hosts that lead me to try machining and writing robot code, both of which left me extremely satisfied. I would definitely recommend that rookies attend events and meetings as 846 is great at being very friendly and welcoming, but competitive at the same time.

Abhishek: Going into the first worksession of ‘Build Season’, I wasn’t entirely sure what to expect. Although I had attended a few off-season worksessions and participated in the virtual 2021 season, this was my first time participating in a proper build season and there were many things I didn’t know yet. One thing I didn’t know was how wonderful of an experience being in robotics is.

From machining, to scouting at competitions, to helping out to clean the shop, I



Underclassmen learn to use the CNC.

realized robotics is an engaging community full of opportunities for everyone. Despite my inexperience, I could make meaningful contributions to the team. While high school robotics may seem daunting at first, it pays off in a truly rewarding manner. Case in point: seeing my work in action. While watching our team compete at events, I felt proud seeing the

“The Funky Monkeys is a great community, and joining this team is one of the best decisions I ever made.”

contributions I had made to our robot, especially when considering how well our team did. From team dinners to competitions, I found myself interacting with a wide variety of people, not just friends and teammates.

If there’s anything I wish I could have done differently this past build season, it definitely would’ve been to have taken further advantage of the opportunities I had at hand, something that I would definitely recommend to incoming members. The Funky Monkeys is a great community, and joining this team is one of the best decisions I ever made.

Yuvraj’s Welcome, Continued...

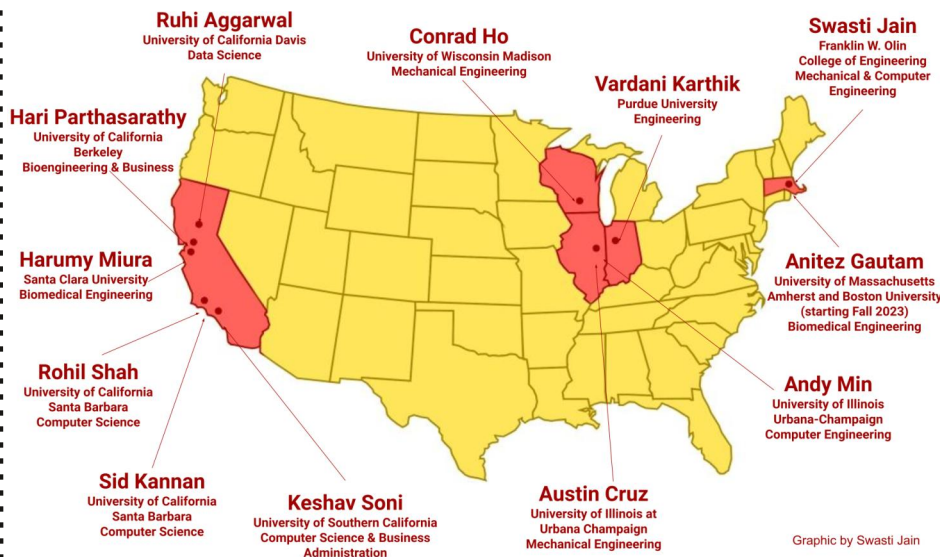
even if there were so many passionate individuals doing their own tasks.

Though I was, at first, apprehensive about my abilities, the community as well as the program gave me self-confidence, and I hope I can continue to provide to our uplifting community as the 2023 season begins!



Yuvraj Dhadwal (sr.) uses the grinding wheel.

Where Can You Find the Class of 2022?



Outreach Initiatives

Nandini Rao (sr.), Agastya Pawate (jr.)

Team 846 prides itself on our alignment with the mission of FIRST, our parent organization- to spread knowledge of engineering and science within society. This year, our team members went to new lengths to introduce, demonstrate, and share the impact of our robotics program with many different members in our community.

This past summer, The Funky Monkeys attended Sensors Converge, a worldwide technology conference held at the San Jose McEnery Convention Center. With over five thousand attendees over three days, this was one of the biggest demos we had ever done! Eager visitors took turns driving the

“...our team showed attendees from all over the Bay Area our program’s contribution towards helping students find and chase their calling in engineering!”

robot and were astonished by the high level of technology in our students’ design, including the perfectly counterbalanced intake and the pneumatically-actuated hooks on our climber. A few even offered internships to our presenting students. At our robot demonstration at Sensors Converge, our team showed attendees from all over the Bay Area our program’s contribution towards helping students find and chase their calling in engineering!

Not only did we reach our community through external events, we also welcomed them onto our team. To spark a passion for engineering amongst girls, we invited our local middle school’s Girls Who Code chapter to one of our build season worksessions this year. We gave around 20 of their students a tour of our workshop and en-

gaged them in discussions about our work with all of our subsystem leads - from software to mechanical design and electrical - as we were in the middle of the process of building our robot. At the end of the season, these students visited us again to see our complete robot. Each girl also got the opportunity to practice driving the robot at the end of the session! All of them expressed interest in joining our team in high school and stated how much they enjoyed the experience. Pleased with these results, Team 846 decided to invite 40 high school students at Townley Grammar School, a girl’s school in England, to a similar event while they were visiting our city. After the demo, both our and their group of students were eager for us to help them start a robotics program at their school! Having been able to share our love of robotics and engineering with the students at these institutions, we look forward to routinely collaborating with them again in the future.

The Funky Monkeys also applied our knowledge in the areas of technology and science ourselves to support our community. This year, we partnered with Replay for Kids, a nonprofit organization based in Ohio, to adapt toys and add an external switch to improve access for chil-

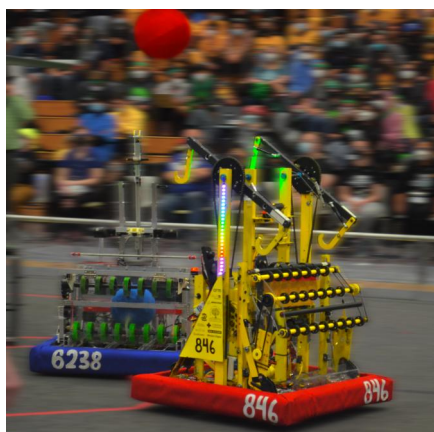


Our outreach team shows our robot to Townley Grammar School who visited from Bexleyheath, England.

dren with disabilities. Members used the skills they gained from working on the robot to strip and solder wires, and reassemble toys. We successfully adapted and sent back 15 toys, and are excited to start work on the shipment of new toys that we just received.

Team 846 places large value on our ability to reach the many audiences within our community and share with them our passion for robotics, as well as to hone the skills we gained from it to benefit our society. We are thrilled about the results of our initiatives, and can’t wait to continue expanding our efforts to inspire the next generation of engineers and leaders!

2022 Season, Continued...



Furious George at San Francisco!

fortunate to join an alliance with Team 3476, Code Orange, and Team 1756, Argos. Although we were underdogs as the 6th seeded alliance, we pulled off two surprise victories each by just a single point. We advanced to the finals of the Galileo Division where we lost to the eventual World Champions. To top it off, we also won Innovation in Control award for some of our unique software approaches like “rewriting our visual pipeline” and “utilizing ellipses tracking.”

The 2022 season was an exciting journey for us and our robot, Furious George, and we can’t wait to see what we will accomplish in the approaching offseason competitions and next year.

Upcoming Events

Sep 24

Chezy Champs

Oct 08

Calgames

Sep 26

Fall Workshops

TBD

Fall Social

Sep 27

Parent Meeting

TBD

Winter Social

Sep 29

Night on the Quad

Jan 07

Season Kickoff

Workshops

Mon.....Design & Arduino

Tues.....Animation

Wed.....Machining & Media

Thurs.....Software

Fri.....Electrical

Graphic by Cindy Liang