Formula SAE Team's 31st Anniversary

By Haena-Young Lee '20

What started as a dozen-member team in 1986 has already expanded into a remarkable group of over seventy impassioned students within the past three decades. Renowned as one of Cornell's most intense project teams, Formula SAE (FSAE) consists of fifteen subteams that work together to build a formula-style race car from scratch every year, improving upon the outcomes of past years and striving for the best designed and most reliable car.

The team has competed in the Michigan International Speedway (MIS) FSAE Competition for the past 29 years, the University of Toronto Shootout for the past five years, and the Formula Student Germany in 2011. The MIS FSAE is an international competition in which over 400 student teams from universities worldwide gather in Michigan for three days to design and create a formula-style race car. Teams are given a score based on design, cost analysis, and business presentation, as well as statistics from the car's performance, for a total of 1000 points. This year, the competition dates are from May 10 to 13. Cornell - which was actually one of the first teams to compete - has been 9 time world champions. Most recently, the team competed at MIS 2016 with their car ARG16. It came in 23rd place overall, while design was 12th place and presentation was 38th, out of 120 teams.

In addition to the students, the team also has a faculty advisor. 2015 marked the last of 27 years that Professor Albert George guided the team as advisor. Professor John Callister picked up the role as full time advisor just recently, in 2016, and the team is looking forward to continuing to flourish with his guidance and experience.

Visit cornellfsae.com or follow Cornell Racing Formula SAE on Facebook for more information about the team and recruitment opportunities.
Visionary Roboticist Guy Hoffman: Redefining Robot

By Bryan Arroyo-Lopez ’19

A new and much welcomed addition to the Cornell faculty in 2016 was the highly intriguing and venturesome Guy Hoffman. After earning a master’s degree in Computer Science from Tel Aviv University, working in the tech industry for software companies, and a series of creative ventures in animation and acting studies, Hoffman found himself at the forefront of innovative human-robot interaction technology. With a Ph.D. from MIT in Human-Robot Interactions (HRI) and collaborations with experts in fields ranging from psychology to architecture, Hoffman applies a broad range of knowledge to his interdisciplinary research and generously answered a few of our questions to help the general engineering student body learn more about himself and his work.

Q: What type of research and projects do you work on here at Cornell?
A: My research is in personal robotics; whether it’s in the workplace or at home, robots that are in close interaction with humans. I study a very broad spectrum in that area. One project we’re looking at now is a wearable robot. (The "wearable robot" Hoffman refers to would act as a lightweight “additional arm that helps you do more tasks.”)

Wearable robotics is a new field for me, but my long term focus is robot timing and flexibility. The implications are enormous with points of possible concern. It’s a little like what happened with smartphones, a small goal that radically changed society. It’s also important to see how communication with robots affects people in the long term - how it changes people's interactions with the outside world.

AI smart home robot, Vyo, that Hoffman developed with South Korean telecommunications company SK Telecom. (Photo courtesy of koreabizwire.com)

Q: You have many varied interests considering your work in animation and acting. Is there a reason you pursued this non-traditional path to your studies?
A: I’ve always been a very curious and interdisciplinary person. I’ve been interested in computer programming and making movies even as a young teenager, programming my own computer and making films and editing.

I try to make this a point of my teaching. To have people go out of their narrow curriculum. One of the reasons I came to Cornell was for its strong liberal arts curriculum, in addition to having amazing engineering faculty. I was looking for a place that had strong footing not just in the specific field I’m in.

Q: What has been your experience with Cornell students thus far? If you had all the resources available to teach any course, what would this course look like?
A: I teach one graduate level class on human-robot interaction, and Mechanical Synthesis, which is really a mechanical design

THURSTON HALL is named after Robert H. Thurston, who was the first president of the American Society of Mechanical Engineers from 1880 to 1882. Thurston was highly active in the engineering community, inviting engineers of his time, such as Alexander Graham Bell, to lecture at Cornell and even contacted Thomas Edison and Andrew Carnegie while attempting to raise school funds. Built in 1951, Thurston Hall is home to one of the fifteen national sites in the Network for Earthquake Engineering Simulations, a $2.1 million lab capable of holding tens of tons of material to simulate thousands of pounds of force and up to six feet of displacement!
So you need to take it seriously; it’s the literacy of the 21st century, you can’t work around it anymore.

When Hoffman finds time, he exercises three times a week and enjoys running and being in nature. The outdoors serve as a source of relaxation and creative stimulation for him from which he plans to draw inspiration from in possible future “living” projects.

To learn more about Hoffman, visit guyhoffman.com and make sure to watch his extremely entertaining and popular “Robots with Soul” TED talk.

Q: What are your thoughts on the depiction of machine learning and robots of the future in media with respect to events like the singularity?

A: I think computer programs are going to become very sophisticated, and in the end, people will decide how much they want the robots to have access to these tools. We need to continue to educate people about social values to understand that technology can suggest a solution but society has to decide.

Q: Is there one thing you’d want to share with Cornell’s MAE student community or those who are interested in learning more?

A: Mechanical engineers need to learn how to program. There’s no world without coding anymore,