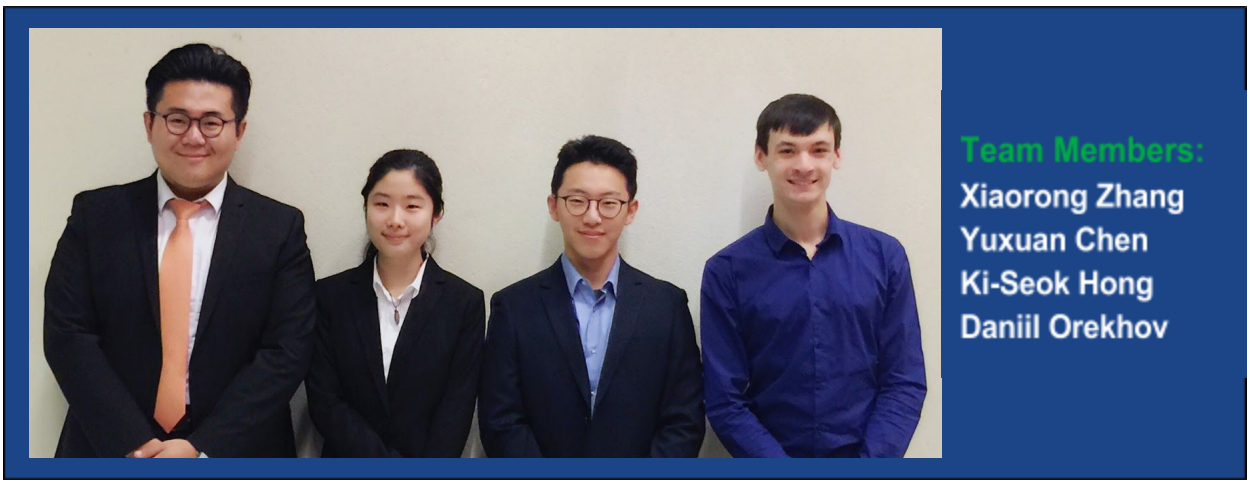
CASS Engineering Design Team

CASS U of T
Design For You

Contact: praxis.engineeringscience@gmail.com



INTRODUCTION

We are a group of Engineering Science students at the University of Toronto seeking for opportunities to contribute to the community by combining our individual skill sets and applying them in real life. Our goal is to make a safe and sustainable design that makes the community more accessible for everyone across GTA. Based on our design philosophy of Community, Accessibility, Safety and Sustainability, we named ourselves the CASS Engineering Design Team.

DESIGN PHILOSOPHY

Community

Mahatma Gandhi once said: “The best way to find yourself is to lose yourself in the service of others”. We, being not just student engineers, but also members of the society, identify with this quote and believe that we can learn the most about ourselves and the nature of engineering design by giving back to the communities around us.

Accessibility

In our design philosophy we value solutions that benefit people with accessible needs. When working on our projects, we strive to integrate various mechanisms for accessibility into our design to ensure that our design concept minimizes any barriers they might have when interacting with the world.

Safety

As a student design team, it is our duty to identify and address risks related to the product in the design stage by implementing a design for safety review process to improve the safety feature of the product.

Sustainability

There are many concerning environment-related issues around today, which is why we are eager to incorporate clean, eco-friendly technology into our design solutions. In our engineering design projects we wish to make an effort to stay mindful of the current state of the environment and to improve it to the best of our abilities.

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XIAORONG ZHANG

xiaorong.zhang@mail.utoronto.ca
http://xiaorongzhang.weebly.com/
(647) 986-7977

KEY SKILLS

- Mathematical Computation
- Experience programming with Java, Python and C
- Engineering Design of Structures, based on Classical Mechanics and Materials
- Leadership and Time Management
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INTRODUCTION

I'm a passionate first-year Engineering Science Student with strong enthusiasm to contribute to the overall community. I'm specialized in classical mechanics, structures and mathematical computations. I possess special interest in Aerospace Engineering and Engineering Design. My international residential and educational background endows me an international horizon, the thought to accept all cultural components of the world and the ability to adapt to the new environment quickly. I was awarded as the University of Toronto Scholar upon my entrance to the University of Toronto. Also, I have placed 96 percentile of University of Toronto's Physics Contest.

DESIGN EXPERIENCE

- In high school, I designed a cover that prevents eggs from breaking
- In November 2016, I designed a part of a beam bridge by using matboard, that withstands a load of 680 N.
- In Fall 2016, I participated in designing mechanisms to prevent theft in Study Room of Chestnut Residence.
- In Fall 2016, I proposed a solution to the existed unuseful public message board.

DESIGN INTERESTS

My major design interests are Design for Safety and Design for Sustainability by taking an approach that benefits the entire community. In my opinion, safety is the premise of all designs and sustainability is currently playing a more and more important role in 21th century, that I cannot ignore as a student engineer.

The values of mine are identifying opportunities in GTA that can be improved by us, exhibiting academic skills in real life and eventually, returning to the community.

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YUXUAN CHEN

yuxuansherry.chen@mail.utoronto.ca
http://yuxuanchen.weebly.com/
(647) 219-8920

KEY SKILLS

- Analytical and research skills
- Prioritizing and multitasking
- Flexibility and adaptability in different environment
- Organization and leadership
- Collaborating with team members
- Speaks English/Mandarin/Cantonese

INTRODUCTION

As an student engineer who is currently finishing first year of engineering science undergraduate program in University of Toronto, I am passionate about applying theoretical knowledge to real world to contribute the surrounding community. My greatest strength is research and problem-solving skills. I am able to deal with multiple tasks by prioritizing and developing professional and practical approach. As an individual, I strive to achieve the highest standard and I am eager to be challenged to go beyond my limit. As a member in this team, I am great at working with others to achieve certain objectives with excellence.

DESIGN EXPERIENCE

- In 2014 and 2015. I have participated in Global Space Balloon Challenge which I designed and help constructed the payload.
- In 2016, I participated in designing a beam in CIV 102 class. The beam was constructed by mat board that could bear weight of 800 N
- In 2016, I participated in redesigning and prototyping the charging station for cell phone on campus to increase the security feature.

DESIGN INTERESTS

My goal is to apply engineering knowledge into design process to have positive impact to the community. I focus on the safety of the product when it comes to designing. I believe that safety is one of the most important factors to be considered during design process so that it eliminates or reduces the related hazards, so that safety is ensured during the design stage. I am also very interested in designing product that benefits people with different level of disabilities, so that they can perceive, understand, and interact like ordinary people.

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KI-SEOK HONG

kiseok.hong@mail.utoronto.ca
http://kiseokhong.weebly.com./
(604) 789-0996

KEY SKILLS

- Leadership and Teamwork
- Analytical and Research
- Mathematical Computation
- Programming in Python, MATLAB, C
- Speaks English, French, Korean

INTRODUCTION

I am a first year Engineering Science student at the University of Toronto and I hope to apply my mathematical and problem solving skills to create a positive impact in our community. One of the most important aspects of being a student engineer is the application of skills acquired from school. To challenge myself and pursue my passion for robotics, I became an active member of the University of Toronto Robotics Association. From my design experiences, I have been able to practice and improve not only my technical competencies, but also my communication, teamwork and leadership abilities.

DESIGN EXPERIENCE

- Sumo Robot (2016 - Present) - Currently designing and building an autonomous 10cm x 10cm sumo robot to compete in the UTRA sumo bot competition in April 2017. Responsible for embedded systems, electrical and mechanical components, which include programming in Arduino, prototyping breadboard, and 3D CAD modeling with Solidworks.
- Redesign of a Stroller Storage Shed (2016) - Designed and prototyped an improved daycare stroller storage shed to optimize space usage, increase maximum stroller capacity, and protect strollers from rain and wildlife.
- Bridge Design Construction Competition (2016) - Designed and constructed a 1325mm bridge out of a sheet of mat-board. Bridge sustained a weight 876 N, placing in top 3 within tutorial group.

DESIGN INTERESTS

I greatly value the aspect of sustainability in engineering design. I believe that future generations deserve the same clean planet in which we live in today, so I am interested in helping reduce the environmental harm that humans create by applying my design experience and theoretical knowledge to develop sustainable design solutions.

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DANIIL OREKHOV

daniil.orekhov@mail.utoronto.ca
www.ecf.utoronto.ca/~orekhovd/
(647) 784-2876

KEY SKILLS

- Can learn fast and independently
- Computer programming in Java, Python, MATLAB, C.
- Experience in mobile app development in industry
- Prototyping in engineering design
- Fluent in English and Russian

INTRODUCTION

I have always been passionate about the world of technology and I am truly fascinated by its power to improve the lives of people and to change the world that we live in. This fascination has driven me to begin my path as a student engineer and I hope that by following it I will be able to benefit those around me by applying both technical and “soft” skills acquired from strong academic environment as well as from reflecting on all sorts of other activities that are not directly related to academia (like my summer job).

DESIGN EXPERIENCE

- In summer 2016, I worked as an intern for a Russian company developing an Android binary options app. I had no prior knowledge of mobile development and there was nobody in the company helping me to learn it. Nevertheless, I taught myself all the necessary skills and performed such that my boss stayed content and even increased my wage for the last month I worked there.
- In fall 2016, I was designing a device that would aid UofT Bookstore employees in lifting heavy textbooks to the shelves. This particular experience has showed me how much I enjoy prototyping solutions to engineering design problems.
- I am currently involved with the University of Toronto Aerospace Team’s Space Systems division, where we are designing a space satellite carrying a microbiology experiment. I am a part of the Thermal subdivision, which is responsible for managing temperatures of the satellite at different stages of its lifetime.

DESIGN INTERESTS

I believe that anything that benefits people around me without harming the others is worth doing. Thus, in my engineering design projects, I hope to utilise my skills in order to improve the lives of people in the communities around me. Furthermore, being a huge advocate for ecology preservation, I am willing to make an effort to identify and address all potential risks of harming the environment, as well as to develop designs that promote sustainability.