

Rice University writing supplement

Rice University Writing

Please explain why you wish to study in the academic areas you selected above.

The Roomba's utility, a symbol of hardware-software synergy, inspired my journey to create a home-cleaning robot using robotics-kits parts. Through 4+ iterations of broken parts and programming glitches, I realized the need for a deeper education in engineering and computer science. Embracing 3D printing, exploring Raspberry Pi's, and producing custom-AI, I soon designed various new household accessories.

However, my ambitions now extend towards pioneering innovations with global transformative potential. To achieve this, I must continue to advance my skills, knowledge, and experiences.

In this endeavor, Rice's ethos of impact-oriented research and innovation calls me. Rice stands as a unique institution that channels resources through real-world companies, organizations, and missions, all of which wield the potential to generate tangible, lasting impacts. This approach represents my aspirations of combining technical knowledge in global issues. Studying mechanical engineering and computer science at Rice, I aim to create a Roomba for the world's future.

Based upon your exploration of Rice University, what elements of the Rice experience appeal to you?

A culture of diverse community and a disposition for holistic education draw me to Rice as my dream-school.

I view my opinions as openings in chess games: if someone exposes a flaw in my plan, I am eager to adapt, building upon a foundation of learning and refinement. Rice's global student body and the powerful bonds fostered through the residential system provides me an expansion of my 'chess team' by learning with people from different backgrounds, cultures, and perspectives.

Additionally, I always aim to pursue excellence across STEM, Arts, Athletics, Literature, communications, and more. Rice's philosophy, demonstrated by interdisciplinary collaborations,

open curriculums, and personalized learning opportunities, resonate deeply with my aspirations, embodying "*Letters, Science, Art*".

This amalgamation of a strong, diverse community and the pursuit of all-encompassing growth makes Rice University the perfect institution for my ambitions. Rice supplements my open mindset while developing comprehensively, a cornerstone of my character.

2023 Essay Selection Rice is strengthened by its diverse community of learning and discovery that produces leaders and change agents across the spectrum of human endeavor. What perspectives shaped by your background, experiences, upbringing, and/or racial identity inspire you to join our community of change agents at Rice?

Please write an essay on the topic selected.

Being born in India (the country of my heritage), lived in Singapore (the foundation of my childhood), and now residing in Houston (the stepping-stone of my future), has exposed me to various perspectives and unique standpoints, but one of my most transformative experiences has been in through my Taekwondo journey.

A few months after I joined my Taekwondo school, I was struggling with balance and technique in a basic sequence of moves. While the senior instructors merely advised repetition, it was then Master Blazek who recognized my struggle and approached me with invaluable insights.

Noticing I was turning my waist too much during my kicks, he created a creative yet effective routine. He asked me to kick a foam helmet he tossed into the air. By throwing it to intentionally exploit my tendency to over-rotate, this exercise helped rewire my muscle-memory and significantly improve my balance. Taking this advice to heart, I went on to win a Gold Medal in the International Open Taekwondo Poomsae Championships, a testament to the profound impact of Master Blazek's teachings.

Two years later, as I earned my first black belt, he offered me a unique opportunity to become a junior-instructor. I eagerly accepted, excited to pass on the technical knowledge and experiences I had gained under his guidance.

In one of my early teaching sessions, I observed a student, Yash, struggling with his taekwondo forms. He executed the sequence of moves with a lack of strength which was sure to reduce his competition scores where "expression of power" is awarded points. I saw my initial state of unaware inaccuracies in Yash's attempts. At this same moment, I saw an old foam helmet in the corner, inspiring a creative teaching exercise.

Holding the helmet in a loose grip, I encouraged Yash to punch it out of my hands. He started with lazy taps, but the novelty of knocking the helmet away and watching me retrieve it unlocked a new excitement in him. Gradually, he started to launch the helmet across the room. This exercise helped Yash build the confidence and energy necessary to infuse a newfound vigor into his forms. Asking him to re-do the sequence but with the addition of this power, the immediate results were undeniable, each move now showcasing a burst of force and energy.

Satisfied with his improvement, I emphasized the importance of practicing with power, not just as preparation for potential self-defense, but also as a means to develop strength and agility.

Learning from Master Blazek and mentoring peers like Yash has been a transformative experience. These opportunities of mentorship have been instrumental in my personal growth. Master Blazek's technical expertise, wisdom, and genuine care have shaped my journey to become a "Master Goyal" not just in the dojang, but in global communities that solve pressing issues. My perspective as an effective mentor and a passionate leader beckon me to carry forward a legacy of expertise, wisdom, and selflessness, empowering my peers and I to tackle extraordinary challenges together.

Box submission Upload now via Common Application

The Box

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The Box

"Soumil Goyal Rice Box.pdf"

Resume submission Upload now via Common Application

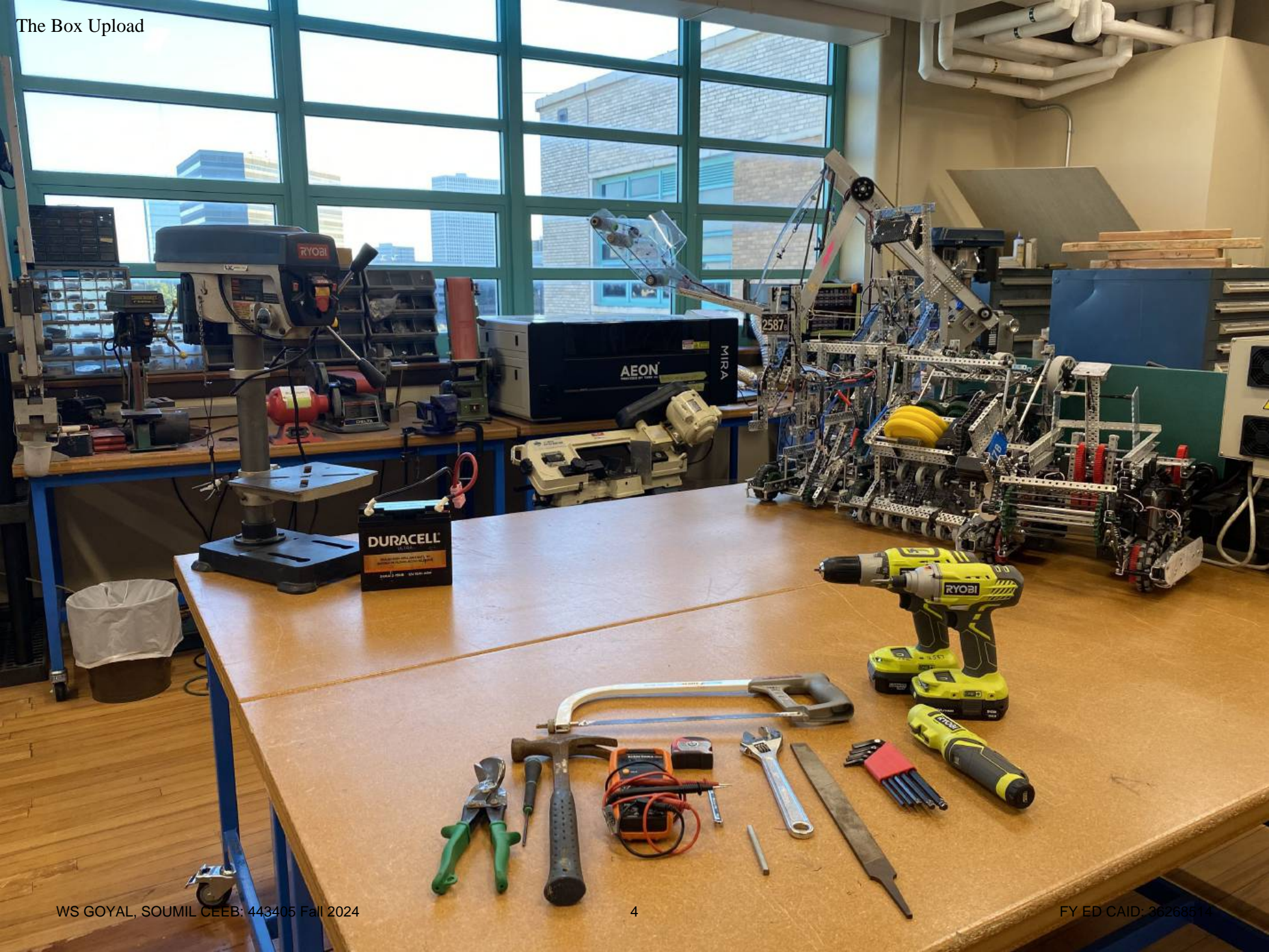
Resume

Uploaded document attached.

Resume

"Soumil Goyal Resume.pdf"

**Honor System
acknowledgement** Soumil Goyal



Languages

- Mandarin Chinese: intermediate proficiency
- Hindi: native proficiency
- English: native proficiency

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- HTML, CSS, JavaScript, PHP, Typescript (Web Development)
 - Bootstrap, JQuery, Babylon,
- Python (Scripting, APIs, Machine Learning)
 - Matplotlib, Tensorflow, Numpy,
- Java (Control, Scripting, Graphics)
 - Graphics2D
- C++ (Control, Scripting)
 - LVGL

Awards/Honors

- Ambition Accelerator Best Voted Idea (2023).
- World championship Inspirational All-Star Award.
- 13x regional, state, and international level Vex Robotics trophies.
- FRC Team Sustainability Award
- FRC District Engineering Inspiration Award.
- 2x General Motors Industrial Design Award.
- 2nd Ranked Extemporaneous speaker in Texas District Tournament.
- 4x NSDA Nationals qualifier.
- University of Texas debate tournament elimination-round participant.
- Guest Speaker at Vex Robotics World Championship.
- Industry Talk host at Autodesk University 2023.
- Houston Resilience Design Challenge Prize Winner.
- Veterans' Pin Design Challenge Finalist.
- Fusion 360 Certified User.
- OSHA General Industry Safety Certification.
- Vex State Championship Amaze Award.
- Rice Elite Tech Camp scholarship recipient.
- Worldwide Taekwondo Online Open Poomsae Championships Gold Medallist.
- Taekwondo Black Belt and Jyokyonim (instructor).
- Winner of CCZJV Arts Contest.
- "Superior" Rating at International Thespians Competition.
- Induction to International Thespians Honour Society.
- IB Diploma Candidate.
- Rise Scholarship Program Finalist.
- West Houston Leadership Summit nominee & attendee.
- National Merit Scholarship Semi-Finalist.
- Schoolhouse World physics and SAT certification.
- Superior Junior Cadet Decoration Award.
- National Honours Society member.

SOUMIL GOYAL

An interdisciplinarity-minded, experienced, and accomplished student

Jobs/Internships

- ION Houston; intern, CNC Specialist: work to maintain the ION Prototyping Lab's equipment, develop new facilities, and coordinate the completion of needed tasks.
- Steps for Dancing; web designer/developer: created a custom-coded website for SFD from scratch. Still regularly maintain, update, and grow the company web-presence. Also involved in digital & physical marketing.

Projects

- Robust Adaptive Network; founder/president: invented a system of drones and rovers to save lives in natural disaster, found thousands of dollars of resources for the invention, and continue to develop this robotic project.
- Pedal Power; founder/president: invented a project that charges students' devices by pedalling a bicycle. Received a grant to complete the project and implemented the public project in my school successfully.
- Publications: work with industry professionals to publish engineering research material following ISBN, API, ISO, ASME, ASTM guidelines.
- Champion Cubers; founder/president: created my own business from scratch to teach local children how to speed-solve the Rubik's Cube in exchange for a fee.
- Screen Salvagers; founder/president: collected 400+ lbs (180+ kg) of waste plastic and reused it in structural robotics & engineering education applications.

Experience

Robotics

- Vex Robotics; captain: developed and lead 3 teams of 30+ students to design, build, program, and practice with robots that compete at an international level.
- FIRST Robotics; captain: lead a team of 40+ students to design, build, and program an industry-level robot to compete at an international level.
- Combat Robotics; lead: direct about 10 people to collaborate and craft open-sport, professional combat robots.
- Lanier Robotics; mentor: volunteer to guide ~40 students in beginning their robotics journeys.

Communications/Debate

- Speeches: I have given speeches, industry talks, and lectures at very high levels including the General Consulate of India, the Vex Robotics World Championships, and the Autodesk University.
- Competition Debate Team; captain: mentored and lead a high-level, competitive debate team to national-level competitions in NSDA, TXFA, UIL, and HUDL speech & debate competitions.
- Honours Debate Course.

Engineering

- Design Challenges: participated in many competitive design challenges including ones hosted by Future Engineers, Printable, National Wildlife Federation.
- Autodesk University; industry talk: selected (and some others) amongst thousands of applicants from professionals, CEO's, businesses, etc. to give an industry talk at one of the biggest engineering conferences.
- IB HL Physics course, IB HL AA Mathematics course, Principles of Engineering & Design course.

Computer Science

- Computer Science Honors Society; officer: manage and mentor 50+ members involving community service, competitions, projects, and workshops.
- Web Development
 - Steps For Dancing Website <https://www.stepsfordancing.com>
 - Champion Cubers website <https://www.championcubers.cf>
 - Personal Portfolio Website <https://www.soumilgoyal.ga>
 - 3D Game Website <https://www.soumilgoyal.ga/3d-game>
 - Freshman User Guide Website <https://www.soumilgoyal.ga/freshman-user-guide>
- Cybersecurity; club officer: manage 10+ members in activities, lessons, and events.
- IB HL Computer Science 2 course.

Athletics

- Swimming: competed up to a state-level and continue to practice as a hobby.
- Soccer: compete in a local club as a midfielder.
- Taekwondo: lead 5-10 team members in a traditional-style school through various competition events.

Arts

- International Thespian Honour Society; officer: project-managed play productions and team rehearsals amongst ~50 members.
- Visual Arts: Self practiced hobby in both digital and physical forms. Used this skill to create marketing posters, web-designs, and book covers.
- Speeches: performed competitive (impromptu and prepared) speeches in 3 different languages.

Other

- Business: worked closely with business leads like Steps for Dancing and Band and Masters to make my own business: Champion Cubers.
- Teaching: effective at teaching others as practiced in numerous teaching/leadership positions. Certified tutor on schoolhouse.world.
- JROTC; S1: responsible to manage all personnel resources, supplies, and advancement readiness.
- Scouts; Den Chief: used my experience to train 30+ younger scouts on technique, lessons, and principles.

Community Service

- <https://docs.google.com/document/d/1NMJOxV938lkRo2drqXECyAFcHCo1ZYmL/>