Youth STEM Learning & Leadership Forum

YSLL

2024 YOUTH STEM LEARNING & LEADERSHIP FORUM JOURNAL

Join us for the 2024 YSLL Journal as we highlight sustainability projects, sponsors of the forum, student volunteers and research--building on the remarkable achievements showcased at the 2024 YSLL Forum!

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YSLL/AEC MISSION STATEMENTS

WHAT IS YSLL?

The 2024 YSLL Summit was a flagship gathering for STEM educators and high school students across Southern California. This year, AEC hosted YSLL on Earth Day, April 21st, at the University of California, Irvine. The forum explored groundbreaking developments in STEM sustainability, namely in the fields of robotics, longevity, and space exploration. YSLL fostered collaboration with students and STEM professionals and nurtured youth leadership, innovative thinking, and a commitment to a sustainable future. Participants embraced the opportunity to make a global impact from our local community, embodying AEC's mission of "thinking globally, acting locally."

AEC MISSION

All-Earth Citizens Foundation (AEC) is a 501(c)(3) nonprofit whose mission is to ensure that humanity maintains a bright future ahead. Most challenges that the world now faces are of our own creation, and it is our responsibility as individuals and as global citizens to work together to amend our mistakes. As a community, we have the potential to shape and improve our own world.

YSLL MISSION

YSLL's mission is to unite STEM learning and exploration with sustainability, integrating these disciplines with the UN's 2030 sustainability goals. The forum hopes to inspire leadership, foster innovation, and instill an unwavering dedication to sustainability and the advancement and longevity of our planet.

AEC FOUNDATION CHAIRMAN DR. XUDONG JIA

Associate Dean, College of Engineering and Computer Science at California State University, Northridge

LEADING WITH PURPOSE: SUSTAINABILITY THROUGH STEM

As a lifelong advocate for STEM education, I am deeply honored to have the opportunity to lead and mentor AEC educators. I firmly believe that educators play a pivotal role in shaping tomorrow's leaders, and I am committed to providing them with the support they need to empower the next generation of change-makers.

Aligned with YSLL's mission, I am devoted to aligning our educational objectives with the 2030 United Nations Development Goals (UNDGs). By integrating these global goals into our initiatives, we can make a meaningful contribution to addressing pressing global challenges and fostering a more sustainable future.

I am particularly excited about the upcoming 2024 Youth STEM Learning and Leadership Forum (YSLL) and our continued partnership with TED-Ed. These platforms provide invaluable opportunities for young leaders to engage with cutting-edge STEM developments and contribute to the advancement of Earth and Space Science, Health and Life Sciences, Engineering, and Artificial Intelligence.

DR. XUDONG JIA

Introductory Speech Excerpt:

Today is special because it's just a day before Earth Day, which is April 22nd. As we approach Earth Day, it's crucial that we take actions to protect and sustain our environment. This event is not just about discussion; it's about applying STEM solutions to environmental sustainability. We need to equip ourselves with both knowledge and practical understanding to implement sustainable practices in our lives.

Over the coming decades, you will become leaders who will shape our world. It's important to address challenges with innovative STEM solutions and critical thinking. This action-oriented approach is supported here, guided by professors and professionals who are committed to change.

This year, we reached out to about 1,500 schools in Southern California and had around 300 students registered, and we aim to grow this number next year. Our goal is to build a tradition that reflects the AEC Foundation's commitment to environmental sustainability.

So far, 46 schools have participated in this event. I sincerely thank the professors and colleagues from institutions like UCLA and CalTech for their support, as well as our local professors who have been instrumental in making this forum a success. Your dedication extends beyond the classroom and inspires us all.

Today's agenda is packed with activities designed to challenge and enlighten you. Each panel, workshop, and discussion is an opportunity to deepen your understanding and contribute to a sustainable future.

Thank you all for being here, and thank you for supporting this important cause.

FORUM SESSIONS

EARTH AND SPACE SCIENCE

- How will navigating the climate crisis shape human destiny?
- How can exoplanets and dark matter shed light on Earth's potential future?
- How will technology develop to mitigate global warming and further advance space exploration?

HEALTH AND LIFE SCIENCE

- Highlight AI and robotics enhancing surgical precision and reducing recovery times.
- Examine ethical concerns in scientific research and healthcare delivery, emphasizing the need for fairness and accessibility in technological advancements.
- Explore AI's role in personalizing medicine and the necessary adaptability for healthcare professionals.

ENGINEERING AND AI

- How far will AI take us?
- How will new developments in materials change how we attack larger problems?
- How will nanoscale innovation impact the future of society?

EARTH AND SPACE SCIENCE

SESSION LEADERS

Dr. Jonathan H. Jiang, Caltech-JPL

Dr. Jonathan H. Jiang is a Principal Scientist within the Engineering and Science Directorate at NASA's Jet Propulsion Laboratory (JPL). He serves as the Editor in Chief for the Earth and Space Science Open Archive and an Editor for the Journal of Earth and Space Science. Dr. Jiang's exceptional leadership and innovative research utilizing NASA satellite observations have earned him prestigious accolades, including the NASA Exceptional Achievement Medal.

Dr. Emily Cardarelli, UCLA

Dr. Cardarelli is a molecular astrobiologist and research faculty at UCLA. She is a collaborator on the Mars 2020 RIMFAX, MastcamZ, and SHERLOC Instrument Teams and has led decision-making and target selection for remote and proximity science analysis. Her research investigates water-rock interactions and the preservation potential of magnesium carbonates in pursuit of identifying signs of ancient life on Mars.

Dr. Kevork N. Abazajian, UCI

Prof. Kevork N. Abazajian is a leading Professor of Physics & Astronomy at the University of California, Irvine, specializing in dark matter, neutrino mass, and galaxy formation. He holds a Ph.D. from the University of California, San Diego, and has garnered prestigious awards, including the National Science Foundation CAREER Award. Recognized for his outstanding contributions, he is also a Fellow of the American Physical Society.

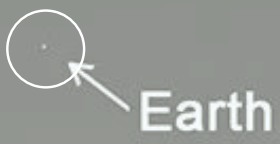
Jason Liu, G11

Jason Liu, a student at University High School in Irvine, is currently interning as a researcher under Dr. Jonathan Jiang. His research focuses on exoplanet classification. He is also active in education, having presented research on education gamification at the Harvard Summit for Young Leaders in China and tutored students with special needs.

DR. JONATHAN H. JIANG, CALTECH/JPL KEYNOTE SPEECH EXCERPT:

Today, I want to show you a picture of Earth from Mars. It's a tiny dot in the vastness of space, emphasizing how small and isolated our planet is. NASA has explored the solar system but has only found life on Earth, which reflects sunlight and uses solar energy.

Currently, we rely on energy sources like oil and coal, which are finite. If we continue at this rate, these resources will be depleted within the next 200 years. Burning fossil fuels increases carbon dioxide in the atmosphere, leading to rising global temperatures and sea levels. The current rate of CO2 increase is unprecedented, and if global temperatures exceed 1.5°C–called the tipping point—above pre-industrial levels, we may face irreversible changes.



Historically, humans have adapted to climate changes, such as during the Ice Age. Our survival depended on migration and adaptation. Today, as we face climate challenges, we must consider whether humanity can expand beyond Earth to ensure long-term survival.

We need to explore space and possibly colonize other planets, like the Moon or Mars. However, current technologies like solar panels may not be effective in space. We may need alternative energy sources, such as nuclear power. My research focuses on space science and developing technologies for potential human settlement on other planets.

My research also involves studying exoplanets in habitable zones around other stars, with the goal of finding new Earth-like planets. We're also working on a project called "Message in a Bottle" to send a message representing human civilization into space, and to preserve it in the Library of Congress for future generations.

In conclusion, the future of humanity depends on our ability to address climate challenges and explore beyond Earth. This depends on your generation to lead these efforts.

Thank you.

EARTH AND SPACE PANEL INTERVIEWS

Key Points:

DR. EMILY CARDARELLI
UCLA

Earth, Planetary, and Space Sciences

- Currently working on the Mars 2020 Rover, focusing on subsurface radar instruments
- Advocated for space exploration and microbial-based sustainability
- Stressed sustainable practices for lithium extraction for electric vehicles
- Advised students to reach out to mentors and be open to new opportunities

DR. JONATHAN H. JIANG
CALTECH/JPL

Climate and Space Science

- Emphasized socio-political challenges in achieving carbon neutrality
- Envisions space travel to be as common as air travel, while stressing the need for long-term planning
- Highlighted the importance of searching for life beyond Earth
- Advised students to follow their interests and communicate their dreams to their parents.

EARTH AND SPACE PANEL INTERVIEWS

Key Points:

DR. KEVORK N. ABAZAJIAN UCI

Sustainability and Space Science

- Aims for carbon neutrality by 2030, stressed planning and community efforts
- Emphasized importance of technological advancements and political will for a sustainable earth
- Highlighted need for technological advancements and political will to move away from fossil fuels
- Advised students on the importance on passion and effort, regardless of parental expectations.

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Dr. Cerelli, Dr. Kev, and Dr. Jiang shared their diverse journeys in science, offering advice on following passions and building useful skills.

HEALTH AND LIFE SCIENCES

SESSION LEADERS

Dr. Laura Goodman, UCI

Dr. Goodman is a pediatric general and thoracic surgeon, specializing in infants, at Children's Hospital of Orange County (CHOC). She leads a multi-center study on pediatric thoracic trauma sponsored by the Eastern Association for the Surgery of Trauma. Additionally, she is CHOC's Associate Trauma Medical Director and Vice-Chair on the Southern California Committee on Trauma.

Dr. Cristal M. Hill, USC

Dr. Hill holds B.S. and M.S. degrees from Tuskegee University and a Ph.D. from Southern Illinois University School of Medicine. Her dissertation focused on aging mechanisms. Now an assistant professor at USC, her research explores dietary proteins' impact on aging. Hill is committed to diversity, mentoring at minority-serving institutions and advocating for inclusion in biomedical research.

Matt Cook, Edwards Lifesciences

Mr. Cook is a Territory Manager at Edwards Lifesciences in the Critical Care division. He provides clinicians with valuable data for proactive patient treatment using AI. Furthermore, he collaborates closely with healthcare professionals in various departments. With a passion for continual learning and professional growth, he is enthusiastic about the future opportunities within the dynamic realm of healthcare technology.

Patrick Yu, G12

Patrick Yu, a senior at Santa Margarita Catholic High School, has a deep interest in biology. For the past two years, he has nurtured this passion through an internship at the UCLA Liquid Biopsy Lab under the guidance of Professor Tseng and Professor Zhu. As he looks forward to college, Patrick is excited about diving deeper into cancer research and exploring the potential of stem cell technology.

DR. LAURA GOODMAN, UCI KEYNOTE PRESENTATION SUMMARY:

The healthcare industry makes up 1-5% of all greenhouse gas emissions globally every year. A major contributor to healthcare waste is surgery, as it composes of 1/3 of total greenhouse emissions out of all healthcare emissions. The costly price of healthcare should urge an effort for promoting sustainability, as it is vital to not only reduce waste, but to reduce costs.

What are some concrete actions that could be made? One method is to utilize logic to apply sustainable practices. In healthcare, this would include reducing wasteful packaging, unused items, and the impact of anesthetic gas. These three methods would significantly decrease emissions as each practice depletes high amounts of energy or releases gas that can be harmful for the atmosphere.

Our longterm goals in healthcare sustainability would be to utilize infinitely recyclable polymer and to maximize efficiency of each tool or supply used. In addition, if robotics are integrated into healthcare, it could bring a variety of benefits, such as reducing blood loss, lessening chances of complication, and creating smaller incisions. This could also lead to better results and maximum efficiency of tools, which would in turn reduce greenhouse emissions.

Overall, the healthcare field is one that significantly impacts greenhouse emissions globally. If we implement methods now to reduce waste from red bags to item packaging, we could step in the right direction to create more sustainable practices in healthcare and to preserve the future of the Earth.

HEALTH SCIENCE PANEL INTERVIEWS

Key Points:

MR. MATT COOK
EDWARDS LIFE SCIENCES

Healthcare Industry Sales

- Works in business and sales within a healthcare and life sciences company.
- Inspired to switch from business to healthcare major to work with professionals in a healthcare space and improve patient care through technology.
- Works at Edwards Life Sciences, combining business with patient care.
- Challenge: Faced rejection from a desired role due to lack of experience.
- Recommended Reading: The Little Red Book of Sales - Teaches how to sell yourself and achieve your goals.

DR. CRISTAL M. HILL
USC

Healthcare & Life Sciences

- Attended Tuskegee University for their veterinarian program; later gained her master in Animal Sciences, focusing on animal immunology.
- Focuses on how a high-fat diet induces cardiovascular disease using a turkey model
- Worked in a lab focusing on biological aging (studying changes in biological processes as humans age) with graduate work centered on nutrition in aging.
- Recommended Reading: Article - “Hallmarks of Aging” - Helps understand how chronic diseases develop

HEALTH SCIENCE PANEL INTERVIEWS

Key Points:

DR. LAURA GOODMAN
UCI

Medicine/ Pediatric Surgery

- Initially wanted to be a veterinarian or environmental engineer but switched to Anthropology in college.
- Pediatric surgery was the most “rewarding choice” because children recover well, providing immediate and rewarding results.
- Have humility to not know things, and don’t be afraid to keep trying and putting yourself out there.
- Recommended Reading: Cutting for Stone - Explores ethical issues in medicine and surgery.

PANELISTS ON SKILLS AND HABITS FOR SUCCESS

Time Management: Prioritize commitments while ensuring enough sleep.

Communication: Vital for learning and understanding others’ perspectives.

Self-Forgiveness: Allow yourself not to be perfect at everything; do your best while giving yourself grace to spend time with family and friends.

ENGINEERING AND AI

SESSION LEADERS

Dr. Xudong Jia, CSUN

Dr. Xudong Jia received B.S. and M.S. degrees from Beijing Jiaotong University. His second M.S. degree is from the University of Toronto, Canada and he earned his Ph.D. degree from the Georgia Institute of Technology. His research interests include intelligent transportation system (ITS) standards, geographic information system (GIS) applications in transportation, traffic safety, and air quality.

Dr. Mortaza Saeidi, CSULB

Dr. Mortaza Saeidi is an assistant professor in the CSULB Department of Mechanical and Aerospace Engineering. He earned his Ph.D. in Mechanical Engineering from the University of Notre Dame and was supported by prestigious fellowships, such as the Prince Engineering Fellowship and the Dehner Graduate Fellowship in Engineering. Dr. Saeidi's research focuses on advancing flexible electronics using cutting-edge materials and 3D printing.

Dr. Paul Weiss, UCLA

Paul S. Weiss earned his B.S. and M.S. degrees in chemistry from MIT and his Ph.D. in chemistry from UC Berkeley. Following his doctoral studies, he worked as technical staff at Bell Laboratories and, after, as a Visiting Scientist at IBM Almaden Research Center from 1988-1989. Dr. Weiss leads an interdisciplinary research group encompassing scientists from a wide range of fields.

Rohan Sampath, G12

Rohan Sampath is a senior at the Geffen Academy at UCLA. He is interested in chemistry and materials for biological applications. For the past two years, he has been working in the laboratory of UCLA professor Paul Weiss on ways to improve material conductivity. Rohan is a 2024 Regeneron STS Scholar and will be attending Cornell University in the fall to study engineering.

ENGINEERING AND AI PANEL INTERVIEWS

Key Points:

What should I study to make the biggest impact in the next decade?

DR. XUDONG JIA, CSUN

- Emphasized that Engineering and AI are crucial fields to focus on, particularly for solving complex problems, and he highlighted AI's transformative impact on both education and business sectors.

DR. PAUL WEISS, UCLA

- Advised listeners to pursue their passions actively, engage with scientific literature and seminars early in their academic journeys, and prioritize learning over focusing solely on grades.

DR. MORTAZA SAEIDI, CSULB

- Encouraged pursuing passions wholeheartedly while remaining open to continuous learning and adaptation.

How will AI impact sustainable engineering in fields such as aerospace, healthcare, and renewable energy?

DR. XUDONG JIA, CSUN

- Generative AI will revolutionize business and education
- Emphasized the importance of deep learning and neural networks.

DR. PAUL WEISS, UCLA

- AI interpolates existing data but doesn't generate new ideas
- Potential for creativity to expand in science and engineering.

DR. MORTAZA SAEIDI, CSULB

- AI accelerates material design and development, contributing to the creation of more advanced technological tools.

ENGINEERING AND AI PANEL INTERVIEWS

Summary Points:

1. Focus on Engineering and AI: Crucial areas for future impact and problem-solving.

2. Pursue Passion and Curiosity: Engage in early learning, follow interests, and prioritize learning over grades.

3. Embrace Interdisciplinary Collaboration: Integration across fields, especially in nanoscience and 3D printing, is essential.

4. Prepare for AI Transformation: AI will revolutionize education, business, and sustainable engineering practices.

5. Enjoy and Explore High School: Take advantage of opportunities for personal growth without rushing the process.

DR. PAUL WEISS, UCLA
CLOSING KEYNOTE SPEECH EXCERPT:

Electronics crossed into nanoscience when devices started using parts smaller than a micron. We're familiar with nanoscale objects, like viruses, as the brain has been operating on a nanoscale for millions of years, but nanoscientists are further behind.

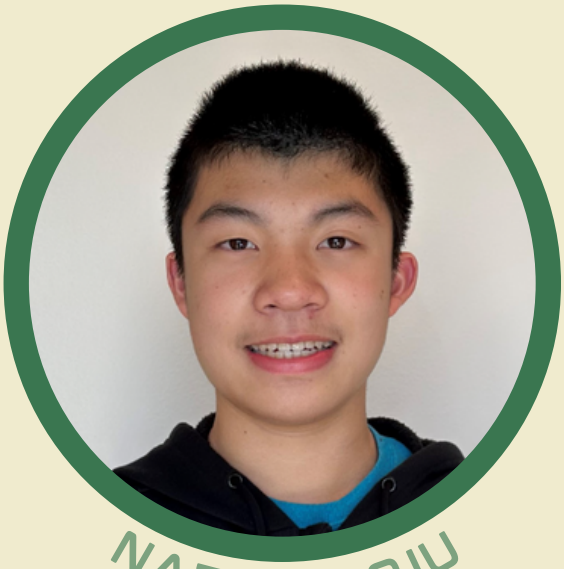
Our lab is exploring scales even smaller than the width of DNA—2 nanometers! Our bodies have highly efficient natural motors such as protein pumps on the membrane that can convert chemical fuel to motion with over 99% efficiency, a feat that human technology currently can't replicate. Understanding these natural processes is a goal in our lab, specifically mechanical motion and charge, and we aim to apply lessons from nanoscale motion to larger scale technology.

Our work extended to solving unsolved problems in medicine and other areas. We aligned our efforts with the UN Sustainable Development Goals, exploring impacts on healthcare, energy, the developing world, and safety.

In the Greater Los Angeles area, there's pressure to innovate, which can lead to groundbreaking discoveries. If an idea works, it’s celebrated; if not, it often goes unnoticed. Don’t be afraid to take risks. At UCLA, we tackle unsolved problems, often in medicine, and collaborate across diverse fields including chemistry, physics, math, neuroscience, bioengineering, and more. Collaboration is key.

Students, from high school to postdocs, are involved in this research, gaining valuable experience and contributing to meaningful work. Remember, we were all high school students once, and starting early can be beneficial.

STUDENT RESEARCHERS



NATHAN QIU

RULAN SHEN

YULIN ZHANG

HELEN ZHANG

CANYON CREST ACADEMY (10)
NATHAN QIU

Building a Sustainable Lunar Base

PROBLEM

The main challenges of building a lunar base include dealing with the harsh environment, securing necessary resources and life support systems, and generating power sustainably. Motivated by his interest in space exploration, Qiu worked towards his goal of designing a sustainable lunar base that can function independently from Earth.

SOLUTION

Qiu's solution can be mainly separated into three components. First, regarding the generation of power, systems that can produce energy on the moon must be developed. Concerning food production, research is split into three methods: traditional farming, hydroponics, and aeroponics.

SOLUTION, CONTINUED

Number of Astronauts: 3	Crop: Potatoes	Caloric density: 4400 Cal/m^2	Harvest Period: 90 days
	Traditional Greenhouses	Hydroponics	Aeroponics
Area	150 m^2	45 m^2	45 m^2
Energy Consumption	712 kW	~2800 kW	~2800 kW
Soil/water Volume	30 m^3	13,700 L = 13.7 m^3	N/A
Water Consumption	470 gal/day	~200 gal/day	~250 gal/day

Crops that are nutrient-dense and suitable for space farming, such as potatoes, will be identified. The final step is calculating resource usage. Qiu plans to determine the area, energy, water, and soil required for each method of food production, based on the number of astronauts and crop specifics.

CONCLUSION

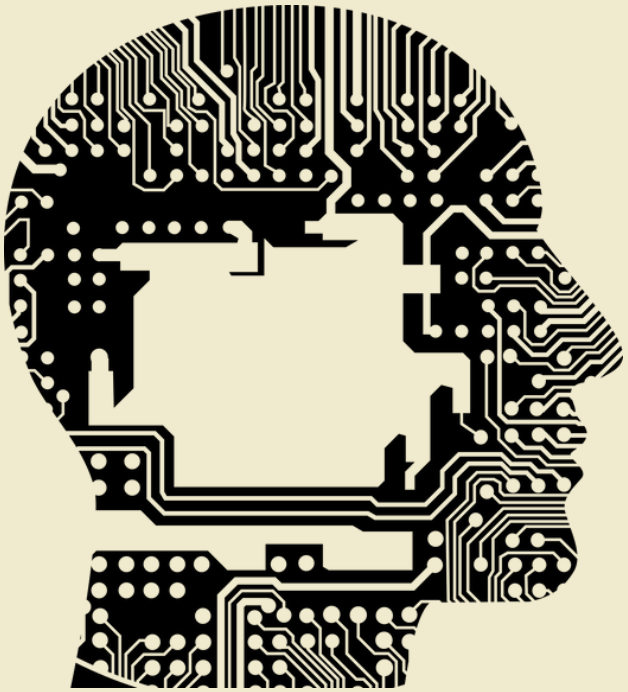
Building a lunar base is seen as a crucial step for humanity, providing a platform for scientific exploration, a launch point for missions to other planets, and a means to ensure the long-term survival of the human species by expanding human habitat beyond Earth. Although this research field is still currently being developed, Qiu believes research should be prioritized further. By focusing on sustainable food production and resource utilization, Qiu hopes to develop a lunar base that allows humanity to reach for the stars.

OC SCHOOL OF ARTS (11)
RULAN SHEN

Navigating the AI Revolution

INTRODUCTION

The rapid evolution of Artificial Intelligence (AI) has significantly transformed societal structures and employment landscapes, prompting concerns about the swift displacement of jobs. This pervasive fear has ignited debates, questioning whether AI is solely a force of replacement or if it concurrently stimulates the creation of novel job opportunities within the existing workforce. This research delves into the nuanced discourse surrounding AI's impact on employment, striving to unravel the complexities and explore the potential dual role of AI as both a disruptor and creator in the contemporary job market.

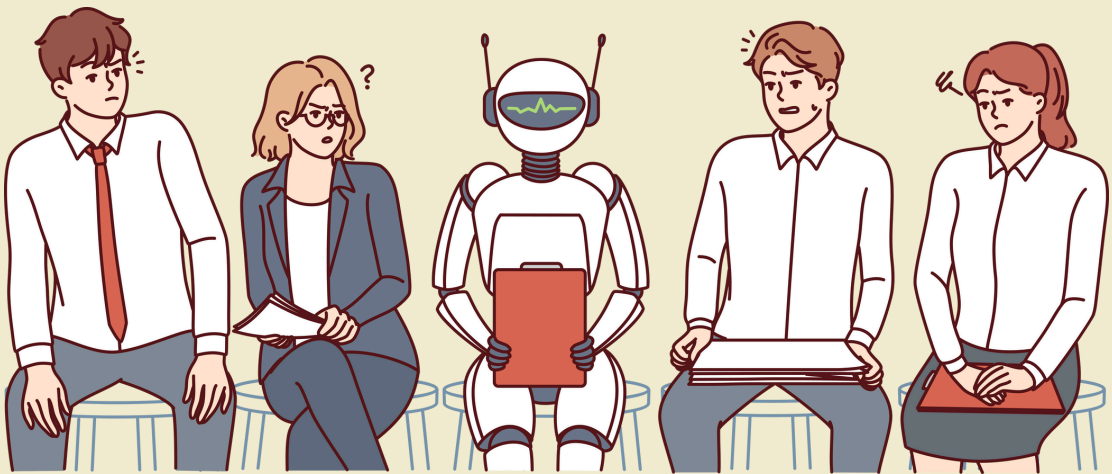


METHODOLOGY

To understand AI's impact on employment, Shen conducted a comprehensive review of literature and data. Google searches focused on AI's role in job displacement and market dynamics, while Google Scholar helped identify gaps in current research. She then selected five papers, integrating scholarly and industry perspectives for a balanced analysis.

RESULTS

As a result of her research, Shen discovered that AI provides both opportunities and challenges. AI is driving job displacement due to its cost-effectiveness, with a need for cautious implementation and regulatory frameworks. Roles in predictable physical tasks, such as those in manufacturing, are highly vulnerable, while management and creative roles are less affected. AI also creates new career paths in data science and creative fields, including in the banking industry. New roles such as Trainers, Explainers, and Sustainers are arising from AI integration, reflecting a shift towards a collaborative workforce. In essence, AI's rise presents a complex challenge of balancing job replacement with growth.



SANTA ANA HIGH SCHOOL (11)
HELEN ZHANG

Innovative Water Conservation in Urban Agriculture

INTRODUCTION

Water scarcity is a persistent issue in California, posing significant challenges to traditional agricultural practices. Hydroponics consume large amounts of water, which is unsustainable in arid regions. Fogponics offers a solution by using fog to deliver nutrients to plant roots suspended in the air. This method minimizes water usage while maintaining optimal growth conditions for plants. Thus, Zhang aims to develop a sustainable fogponics system.

METHODOLOGY

Zhang's research was composed of four key components: ultrasonic foggers (delivers a fine mist produced from a nutrient solution to plant roots), humidity and temperature sensors (monitors environmental conditions to ensure optimal growth), pH sensors (maintains the correct acidity of the nutrient solution), and Arduino-based controls (microcontrollers that process data from the sensors and automate the fogger operation).

Construction of the system was divided into four parts. First, during the design phase, the system was finalized using CAD software. The construction phase allowed for the assembly of the physical structure with PVC piping and installation of electronic components. In the testing phase, initial tests to adjust sensors and fogger settings were conducted, and, during the deployment phase, the system was installed in a designated area at the school.

RESULTS

The fogponics system demonstrated a 40% reduction in water usage compared to traditional hydroponics, validating the system's potential for sustainable urban agriculture. Future research could explore integrating renewable energy sources, such as solar panels, to power the system, enhancing its sustainability.

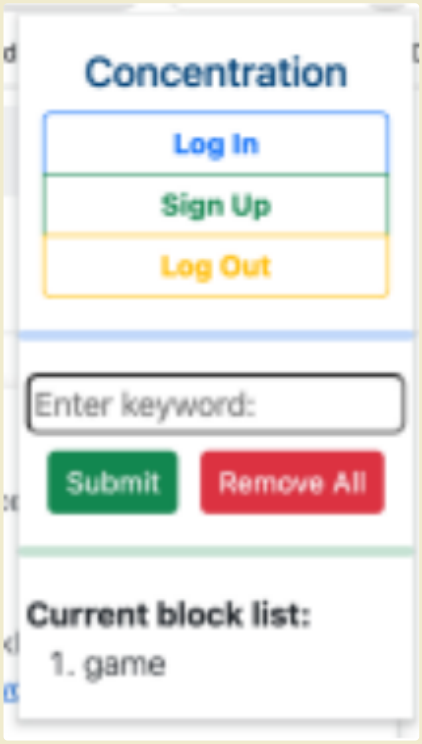
UNIVERSITY HIGH-SCHOOL (12)
YULIN ZHANG

Auto-blocking Distracting Websites with NLP-learning

INTRODUCTION

Distraction is a society-wide problem that appears to be especially prevalent among teenage internet users. It hinders productivity and encourages inattention and daydreaming. In addition, it was shown that returning to a concentrating state after distraction takes 23 minutes and 15 seconds, which demonstrates the effects distraction has on one's work mode. Zhang developed Concentrate as an application that uses NLP and web scraping to intelligently block distracting websites from users.

METHODOLOGY



Written in Python, JavaScript, and various web development languages, the extension utilizes web scraping to extract textual content from target websites and employ NLP algorithms (PageRank and cosine similarity) to summarize data. This summary undergoes data analysis and semantic textual similarity calculation, intelligently blocking distracting websites.

CONCLUSION

During construction of Concentrate, Zhang persevered through various challenges, such as parsing, extracting, and comparing unstructered web content; dealing with the consequences of any changes in Chrome API; and designing a clean user interface. Despite these obstacles, through various experiments, Concentrate was able to achieve an accuracy score of 98% for blocking relevant websites and 100% for displaying irrelevant websites, indicating its effectiveness with linking keywords and blocking the website.

NON-PROFITS

Muzeo Museum and Cultural Center

Muzeo, a 25,000 square foot cultural complex in Anaheim, encompasses the historic Carnegie Library and a modern gallery space. Established in 2007, Muzeo preserves the city's heritage through the Anaheim Historical Society and innovative exhibits in art, history, and science. The complex, which includes a building that was funded by Andrew Carnegie and used as a library from 1908 to 1963, serves as a vibrant center for community engagement with a range of activities including concerts, workshops, and family events. Muzeo's mission is to celebrate and explore diverse cultural heritage and arts through dynamic programming.

Moringa For Love

Moringa For Love (MFL) is a nonprofit organization in California that addresses pressing global challenges. Their goal is to harness the transformative potential of the Moringa tree to combat issues from malnutrition to deforestation. Dr. Patrick Chou, the founder of MFL, had embarked on a mission to cultivate Moringa trees throughout the world after witnessing devastating environmental conditions in Haiti. Over the years, MFL has expanded into the global sphere, now spanning 22 countries across 4 continents, and they have provided invaluable support to marginalized communities. Through scholarships and financial aid, MFL has empowered 1,000+ students, nurturing the next generation of leaders in underprivileged regions.

NON-PROFITS

Animal Defenders International

Animal Defenders International (ADI) is a prominent animal protection organization with a strong presence in the US, UK, and other parts of the world. Founded in 1990, ADI focuses on various animal welfare issues, including the use of animals in entertainment, research, and clothing production. The organization is known for its impactful campaigns and investigations aimed at exposing animal abuse and influencing legislation.

AEC IMPACT AND FUTURE INITIATIVES

Through relationships with university faculty, AEC has connected high school students throughout Southern California to opportunities curated to their scientific interests. YSLL's student researchers and session leader student volunteers found their mentors through AEC's network. AEC's desire for hardworking students to succeed is evident in the formation of the YSLL forum, which opens high schoolers' eyes to fields of science and groundbreaking research they may have never considered otherwise. Positioned as the flagship summit for Southern California's high school students, YSLL integrates STEM exploration with the United Nations' 2030 Environmental Goals, ensuring that YSLL stays true to AEC's central mission as an environment-focused foundation. Looking towards the future, AEC hopes to inspire and teach new generations to integrate innovation, curiosity, and environmental consciousness.

YSLL Forum, April 2023

AEC high school student volunteers receive presidential recognition for volunteer hours (100+)

AEC student volunteers clean up beach

YSLL Forum, April 2023

THANK YOU YSLL VOLUNTEERS!

CREDITS

YSLL 2024 Forum Advisors:

Dr. Jonathan H. Jiang
Dr. Emily Cardarelli
Dr. Kevork N. Abazajian
Dr. Laura Goodman
Dr. Cristal M. Hill
Mr. Matt Cook
Dr. Xudong Jia
Dr. Mortaza Saeidi
Dr. Paul Weiss

AEC Supervising Board

Dr. Xudong Jia
Ms. Jency Yan
Mr.Eugene Antonov

Student Researchers:

Nathan Qiu
Rulan Shen
Yulin Zhang
Helen Zhang

Student Panelists:

Jason Liu
Patrick Yu
Rohan Sampath

YSLL Journal Editing Team

Thomas Tang*
Eva Sharma
Sabrina Soto
Catherine Pei

YSLL Journal Graphic Design Team:

Stephanie Feng*
Doris Jiang
Angela Yao
Amy Pham
Sarah Xiang
Sabrina Soto

Journal President:

Catherine Pei

*Team Leader