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KRISHIV KUKREJA

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EDUCATION

Tanglin Trust School, Singapore

2023-25

IB - Higher Level: Mathematics Analysis and Approaches, Physics, Chemistry

IB - Standard Level: Economics, English Language & Literature, French

IGCSE - Mathematics, Physics, Chemistry, Biology, Computer Science, Economics, English, French, Drama

2021-23

Online Courses 2022-23

- CSCI-50 Harvard Summer School Intensive Introduction to Computer Science (highest mark in the Final Test)
- Introduction to Python by the University of Michigan; Introduction to Machine Learning by Duke University
- Sustainable Finance by the Investment Management Association of Singapore

ACADEMIC ACHIEVEMENTS

• IGCSE School Topper with Highest Marks in

2023

- o World (Physics, Math, French, Biology); Asia (Chemistry); Singapore (English Literature)
- Perfect 1600 score on SAT on first attempt

2023

MATHEMATICS:

- Purple Comet Math Meet $2024 1^{st}$ in Singapore, top 3% in the world.
- British Mathematics Olympiad Round 1 (BMO 1) 2023 (Qualified through the United Kingdom Mathematics Trust Senior Math Challenge) Merit, Highest in Year
- United Kingdom Mathematics Trust competition 2021-23 Gold Certificate for 3 consecutive years
- Singapore & Asian Schools Math Olympiad (SASMO)'23 Gold Medal: 1st in School, 11th in Singapore and 134th in world
- University of Waterloo Contest (Euclid'24: Distinction (81/100); Cayley'23 and Pascal'22: Gold Medal: School Champion and International Student Honor)

SCIENCE:

- Royal Society of Chemistry Olympiad 2024 Gold Award, top 8% in the world
- British Physics Olympiad 2021-24 Gold Certificates for 4 consecutive years
- British Astronomy and Astrophysics Olympiad 2022 Gold Award
- Science Bee Regional Round 2023 2nd place. Qualified for the Asian Championships

COMPUTER SCIENCE:

- Microsoft Imagine Cup Junior 2024 Winner
- Conrad Challenge 2023-24 Achieved Conrad Innovator status (URL)
- Hackathons (Uber Global'23: Top 5 in APAC & Australia; CloudHacks'23: Top 5 in Singapore; Singapore Hack2ber Coding Challenge 2023 Top 5% Certificate of Outstanding Achievement)
- Canadian Computing Competition (2024 International Student Honor Roll; 2022 Distinction)

ECONOMICS:

- World Economics Cup Global Round 2023 Team placed 3rd of 421 teams & I placed 1st individually of 2284 students
- Bretton-Woods International Economics Competition 2024 2nd Place
- National University of Singapore's National Economics and Financial Management Challenge (NEFMC) 2024 4th Place

LEADERSHIP RESPONSIBILITIES

Elected School Head of Sustainability (Student Council)

2024-Present

- Worked with Metanoia (sustainability consultants) to conduct an environmental audit of my school to determine hotspots, and presented roadmaps to net-zero by 2050 to the school board of governors.
- Connected my school with World Wildlife Fund for Nature (WWF), organizing several sustainability projects like the Plastic Waste Project and elevating our school to the status of a WWF Eco-School.
- Presented green cleaning project at a global summit; organizing national sustainability fair.

Elected Head of School Debate Squad

2024-Present

- Mentored 80+ students through 120+ sessions by organizing 'The Great Debate'
- Hosting national debate tournament with 20+ schools

Elected School House Vice Captain

2023-2024

• Organized the prestigious House Day and School Fun Run to raise \$10,000 for ARC Children's Centre.

Founder and Head, Mount Olympus Math (website for Olympiad training)

2022-Present

• Trained around 50+ students in Singapore and 150+ underserved students in India for 12 Mathematics Olympiads

Founder and Head, MathAdapt (website for neurodiverse learners)

2022-Present

- Developed a web application on which students with ADHD, dyslexia and color blindness could learn Mathematics.
- Used by 30+ schools across 5 countries. Received a Certificate of Appreciation from Dr. Patti Hill, International President Lions Club. Published in national newspapers.

Team Captain, World Scholars Cup (Global round)

2022

- Team Ranked 1st in the world; Won the Asimov Award (highest individual score in Quiz). Won Best Scholar in Region.
- Continue to train members weekly on 3 disciplines Debating, Quizzing, and Writing

Head, Economics Debate Society, Tanglin Trust School

2022-2023

- Organized the school Economics Forum 2023. Connected with Mr Pradeep Nair, Global Head Structured Solutions & Development, Standard Chartered Bank to conduct an interview about supply chains and sustainable trade finance
- Organized 10 debate skill sessions, mentored upcoming debaters and conducted an Economics Debating Competition

Founder and Head of Cyber Security Club, Tanglin Trust School

2023-Present

- Organized a cybercrime awareness workshop for the State Bank of India Pensioners Club, Dehradun
- Trained a team of students to educate the elderly about cyber security threats
- Explained Python programming concepts including its use in ethical hacking algorithms.

Founder and Head of Science Bee Club, Tanglin Trust School

2023-Present

- Trained 17 students for the International Science Bee. 4 members qualified for the Asian Championship.
- Organized a STEM Conference with professors from the National University of Singapore

DEBATE

- Ministry of Education-Anglo Chinese Junior College Debate Competition 2024 Plate Semi-Finalists
- International Debating Championships (IDC) 2023 Placed in the top 4 out of 54 teams.
- Raffles Debate Association (RDA) Competition 2022 (Singapore inter-school debate) Team placed 1st

PERFORMING ARTS

Piano 2020-Present

- Completed the Associated Board of the Royal School of Music (ABRSM) Grade 5 qualification.
- Participated in school and external concerts (including online concerts during COVID) such as the Studio Kee concerts (URL) bi-annually and the Senior Musicians Concert at Tanglin Trust School
- Worked as a piano tutor to train students

Drama/Theater 2014-Present

- Participated in school drama productions such as Oliver Twist, Aladdin, Peter Pan and The Museum Heist Theories
- Mentored younger performers as a director in a production of The Changing Room and Pool No Water
- Wrote & enacted criticism of toxic masculinity

INTERNSHIPS/VOLUNTEERING/RESEARCH

Author of research paper – "The design and development of an educational device used to enhance the perception of 2-D shapes and angles by blind individuals" Jan 2023-Present

- Carried out a literature review of current innovations in this field and identified the lack of effective, low-cost solutions.
- Designed a prototype with a focus on ergonomics and user requirements, analyzed using QFD matrices.
- Built a prototype and sent it to the National Association for the Blind in New Delhi for user feedback.
- Published in Springer Nature, SCOPUS-indexed: Lecture Notes in Mechanical Engineering

Author of research paper – "Investigating the Integration of Blockchain into Supply Chains to Measure Scope 3 Carbon Emissions: A Survey" Jul 2023-Presen

- Carried out a literature review and proposed research recommendations and possible methodologies to investigate the gains in efficiency and accuracy from interlinking several supply chains together into one blockchain.
- Reviewed by Teaching Fellow at Harvard University, Dr. Guy White.
- Published in Springer Nature, SCOPUS-indexed: Studies in Systems, Decision and Control

Collected and analyzed data to uncover correlations between a range of socioeconomic factors and the numbers of submarine cables

• Proposed and presented solutions to managing explosions in data requirements in the next 50 years in terms of transfer, storage and security

National University of Singapore (NUS), Centre for Quantum Technologies

May 2023-Present

Jun 2023-Sep 2023

• Created <u>videos</u> about Schrödinger's Cat and the Math behind the concept to demystify it with Dr. Berthold-Georg Englert

Diligent Global Jul 2023-Jul 2024

• Assisted in the development of a computer vision software which used a machine learning model to detect violations in Personal Protective Equipment for a pharmaceutical company

 Created the error handling routines for interactions with the queuing and caching system, debugged the program and troubleshooted incidents

Volunteer at the Singapore Red Cross

Mar 2023-Present

• Wrote articles inspiring a spirit of volunteerism and describing the contributions of Volunteer Leaders

Lead Editor and Social Media Content Creator for the Junior Imprint Magazine

Aug 2023-Present

- Wrote and edited articles; launched social media cyber security awareness campaign
- Conducted 20+ workshops with 150+ writers and editors on concision, research, evaluation, etc.