

# AADITYA U JHAMB

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## EDUCATION

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<b>King's College School (KCS), Wimbledon, London</b>	2020 - Present
IB Diploma Grade 11 (Predicted): 45/45	2024
Grade 10 (IGCSE) – 11A*(9's)	2023
<b>The Mall School, London</b>	2013 - 20

## STANDARDISED TESTS

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<b>SAT Super Score: 1560</b> (Math: 800, English: 760)	2024
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## HONORS & AWARDS

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• <b>Headmistress' Medal for Outstanding Achievement in Mind, Spirit, Heart</b> , Grade 11, KCS	2024
• <b>Chemistry Subject Award</b> , Best Chemistry Student in Grade 11, KCS	2024
• <b>Selected as Young Changemaker in School</b>	2024
○ Represented KCS for <b>Royal Society of Biology's</b> new digital series on <b>'Biology for a better tomorrow'</b> with a special focus on <b>UN Sustainability Goals</b> , by <b>Content with Purpose</b> , UK	
• <b>Sports Scholarship</b> , KCS	2020 - Present
• <b>Physics Subject Award</b> , Best Physics Student in Grade 10, KCS	2023
• <b>Head of House Commendation</b> for Academic attainment and Effort in all subjects in Grade 10, KCS	2022
• <b>Headmaster's Medal for Outstanding Achievement and Effort – Top Grades in the Year</b> , Grade 9, KCS	2021
• <b>Head of House Commendation</b> for Academic attainment and Effort in all subjects, Grade 9, KCS	2021
• <b>All A+'s, Common Entrance Examination at 13+</b> , Independent Schools Examinations Board	2019 - 20

## LEADERSHIP

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• <b>Board Member, Mirror Board</b> , KCS	2024 - Present
○ Selected for Headmistress' initiative to shape school community through diverse & strategic contributions to policies & development	
• <b>House Captain</b> , Member of School's Students' Senior Leadership Team, KCS	2024 - Present
• <b>Head, Blue Marble Cub</b> , Environment and Sustainability Working Group, KCS	2024 - Present
• <b>Senior School Prefect</b> , KCS	2023 - 24
• <b>Captain, Sunbury Cricket Club Team</b> (U12, U13, U14, U15, U16, U17), London	2019 - 23
• <b>Vice-Captain, KCS Wimbledon, U15 Cricket Team</b>	2020 - 22
• <b>Captain, The Mall School Cricket Team</b> , London	2013 - 20
• <b>Co-curricular Activities (CCA) Leader</b> , Table Tennis Club, KCS	2022 - 23

## NATIONAL AWARD & PATENT

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<b>The Big Bang Competition National Award, for UK's Young Scientists &amp; Engineers by Engineering UK</b>	2024
○ For <b>"AI-Enabled Traffic &amp; Pollution Prediction"</b> , <b>"The Network Rail Innovation in Transport Award"</b> Category	
<b>United States Patent (Patent No: 12,106,662 B1; Date: Oct. 1, 2024), United States Patent and Trademark Office</b>	2024
○ Issued a United States Patent titled <b>"Machine Learning Traffic Determination"</b> for my work on development of <b>cost-effective sensors and advanced AI models by integrating ML techniques with real-time data collection for monitoring and forecasting traffic and pollution levels</b>	
○ Research will <b>empower communities to mitigate the environmental impacts of congestion</b> , helping urban sustainability	

## SUSTAINABILITY LITERACY INITIATIVES

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<b>EMPOWER (Energizing Minds Power Our WoRld) Program – Innovator &amp; Founder</b>	2023 - Present
○ Launched an Energy Literacy and Sustainability Campaign in schools in the UK to foster energy literacy, increasing awareness of energy sources, provide resources for responsible consumption and encourage action through innovative solutions and policy advocacy, thereby empowering young minds to drive meaningful change	
○ Developed a self-paced Online Energy Curriculum with various levels of difficulty and Gold, Silver and Bronze Certification	
○ Outreach	
• Rolled out the EMPOWER Campaign to KCS's 20+ Partnership Schools in the UK	
• Integrated Energy Curriculum into internal learning platform to educate faculty/students at KCS UK & International Schools	
<b>WAVES (Water Awareness and Value for Environmental Sustainability) Program, Imperial College - Founder</b>	2024 - Present
○ <b>Mentor: Dr. Ana Mijic</b> , Director, Center for System Engineering & Innovation (CSEI) & Reader, Water Systems Integration Lab (WSIL)	
○ Created a Water Conservation Campaign in collaboration with Imperial College, London	
○ Developed a self-paced Online Curriculum on Water Conservation with Gold, Silver and Bronze Certification	

## ENVIRONMENTAL PURSUITS AND RESEARCH

- Intern, Arthur D. Little, London** 2024 - Present
- Developed a Whitepaper on **National Water Tariff & Valuation Study**, Ministry of Environment, Water & Agriculture, KSA
- Intern, Center for System Engineering & Innovation, Water Systems Integration Lab, Imperial College, London** 2024 - Present
- Mentors: **Dr. Ana Mijic, Director, CSEI & Reader, WSIL & Dr. Barnaby Dobson**
  - Developed series of micro-code tests for SWMManywhere, a software tool simulating sewer networks globally using geospatial data
- Independent Research under Mentor, Dr. Sindhu Ghanta, PhD, E&CE, Northeastern University** 2023 - 2024
- **Research on “Investigating & Mitigating the Effects of Traffic Congestion on Air Quality using Machine Learning models”**
  - Developed cost-effective sensors & advanced AI models for monitoring and forecasting traffic and pollution levels
  - Integrated ML techniques with real-time data collection, empowering communities in mitigating environmental impacts of congestion
- Intern, Center for System Engineering & Innovation, Water Systems Integration Lab, Imperial College, London** 2023
- Mentors: **Dr. Ana Mijic & Dr. Barnaby Dobson**; Authored a report on ‘Evaluating Energy Footprint of Water’
  - Developed a model in Python and amalgamated it in existing Water System Integrated Modelling Framework
- Independent Research under Mentor, Nabib Ahmed, Researcher, Harvard University** 2022 - 23
- Research on **“Machine Learning models for the Prediction of Heating and Cooling Loads of Residential Buildings”**
  - Built a predictive model to maximize energy efficiency by estimating heating & cooling load of buildings utilizing AI ML models
- Research Publication, IEEE Xplore, 2023 World Conference on Communication and Computing (WCONF)** 2023
- Presented & Published research paper on Machine Learning Models for Predicting Heating and Cooling Loads of Residential Buildings

## SCIENCE & MATH ACCOLADES

- **Gold Certificate, Senior Physics Challenge, UK (Grade 11)** 2024
- **Qualified for British Math Olympiad (BMO-1) (Grade 11)** 2023
- **Gold Certificate, Senior Mathematical Challenge, UK Mathematics Trust (UKMT), (Grade 11)** 2023
- **CREST GOLD National Award by British Science Association & UK Research & Innovation (Grade 10)** 2023
  - For research on **“ML Models for predicting the Heating & Cooling Loads of Residential Buildings”**
- **Distinguish Honor Roll, Cayley Mathematics Contest (Grade 10)** 2023
  - Center for Education in Mathematics and Computing (CEMC), University of Waterloo, Canada
- **Maclaurin Mathematics Olympiad, UKMT (Grade 10)** 2023
- **Distinction & Gold Medal, Bebras Computing Challenge, UK (Grade 10)** 2022
- **Distinction, Fryer Mathematics Contest, CEMC, University of Waterloo, Canada (Grade 9)** 2022
- **Gold, Biology Olympiad, UK (Grade 9)** 2022
- **Gold Certificate, Intermediate Mathematical Challenge, UKMT (Grade 9)** 2021
  - Qualified for Pink Kangaroo Challenge; Amongst Top 5% High School Mathematicians in UK

## RESEARCH IN STEM

- Research Project in Deep Learning, under mentorship of Alec Sargood, PhD student, UCL, London** 2023 - Present
- Used AI and machine learning to project to detect a) cancer cells and b) covid 19 from x-rays from lungs, under a mentor
- Research Project in Neural Networks under mentorship of Nabib Ahmed, Researcher, Harvard University** 2022
- Built algorithm to detect/stop distracted driving in real time using neural networks, KNN model, xfer learning & salience maps

## CHALLENGES, INNOVATION & MENTORING

- IMECHE (Institution of Mechanical Engineers) Design Challenge, KCS, Wimbledon, London** 2023 - 24
- Designed and built a robot for an internal pipe climber
- ICE (Institute of Civil Engineers) - CityZen Award Challenge, KCS Wimbledon, London** 2023 - 24
- Participated in digital classroom games with a series of civil engineering challenges
- Teacher, Math, KCS Wimbledon, London** 2022 - 23
- Taught Math to Grade 5 students at Poplar Primary School, London

## COURSES

- **Self-driven online course, “AI Scholars Program” - AI/ML course** 2022

## CRICKET ACHIEVEMENTS

- **Sports Scholarship, KCS** 2020 - Present
- **Represented School’s 1XI Cricket Team (Varsity) for an International Cricket Tour to UAE, KCS** 2024
- **Best Player of the Year Trophy, Sunbury Cricket Club** 2022
- **Double Champions, KCS, Surrey County Cup and English Schools Cricket Association T20 Cup** 2022
- **Member, Surrey U14 & U15 County Age Group (CAG) Cricket Squad** 2021 - 22
- **Best All-Rounder of the Year (U14), Sunbury Cricket Club, London** 2021

## VIOLIN

- **Achieved Grade 5 in Violin, The Associated Board of the Royal School of Music (ABRSM), London** 2014 – 19