

AARUSH VIR BANERJEE KHARBANDA

Phone: +971585894303

Email: aarushvir9208@dubaicollege.org/

Website: <https://aarushvbk.com/>

EDUCATION

Dubai College 2019-2026
A-Levels (Predicted Grades): Mathematics (A*), Further Mathematics (A*), Physics (A*), Music (A*), EPQ.
GCSEs: English Language (9), English Literature (9), Mathematics (9), Biology (9), Chemistry (9), Physics (9), Music (9), Computer Science (9), Economics (9), Further Mathematics (9), HPQ (A*).
SAT: 1530 (790 Math, 740 Reading & Writing).

HONORS AND AWARDS

MIT Undergraduate Research Technology Conference (URTC) – Presenter 2025
My research paper titled “EpiMuse: a machine-learning system for customized music therapy for epileptic patients” was selected for a Lightning Talk at the IEEE MIT Undergraduate Research Technology Conference (URTC) 2025. I was invited to present my paper at MIT to a distinguished audience including MIT professors, industry experts, and university students from across the world.

FIRST Global Challenge – Global Innovator Award & NTE Award 2025
Selected to represent Team UAE at the FIRST Global Challenge (FGC) Asia Championship 2025 in Almaty, Kazakhstan. Team UAE was the sole recipient of the Global Innovator Award (from 40+ international teams) for our innovative and creative robot design and match strategy. At the FGC Global Competition 2025 held in Panama City, Team UAE won a Gold Medal (from 190 international teams) for our NTE project.

National Youth Orchestra of Dubai – Carnegie Hall Performance 2025
Performed at the 2025 Viennese Masters Invitational Concert at Carnegie Hall with the National Youth Orchestra of Dubai. Attended orchestra masterclass with Helen Cha-Pyo (Principal Director of NJ Youth Symphony) at the Juilliard School of Music.

CCIR Research Symposium – Presenter 2025
My research titled “The Illusion of Control: Perceived versus actual Control, Authorship, and Agency in Generative Music Systems” was selected for the CCIR Research Symposium. I was invited to present this research at Kings College, University of Cambridge, to a distinguished audience including Cambridge Professors and Nobel Laureate Dr. Thomas Cech.

Youth4Sustainability UAE Climate Hackathon – First Place 2025
My team trained a machine learning model to classify 12 different types of waste using a dataset of 1000+ images and then used it to build a web app called EcoScan+. We pitched our solution to judges from Masdar and Siemens Energy who awarded us first place, out of twelve competing groups, and a cash prize of 20,000 AED to build our app into a full startup.

UKMT SMC – Gold Award 2024
Scored in the Top 8% of test-takers in the United Kingdom Mathematics Trust (UKMT) Senior Mathematical Challenge 2024. Qualified for the follow up Senior Kangaroo Round.

GCSE Music Examination – 2nd Highest Mark in the Middle East 2024
Scored the 2nd Highest Mark in the Middle East (187/200) for the 2024 GCSE Music Examination. Scored full marks in both the composition (30/30) and performance (30/30) components of the examination.

Dubai College Year 11 Music Subject Award 2024

I was awarded this prize for my contributions to Dubai College's several musical ensembles and my performance skills, composition skills, and music theory knowledge displayed in the GCSE Music Course.

British Physics Olympiad Experimental Project – Silver Award 2024

I conducted several lab experiments and used the data collected to produce a 12-page report on the motion of a free-falling slinky. My project was selected to represent Dubai College, from a pool of 10 projects, and was sent off to BPhO markers at the University of Oxford, who gave the project a Silver Award.

Formula De Montfort University Engineering Competition – First Place 2022

Led team of 4 to design and build a gravity racer using the DMU lab resources. Gravity racer won first place on race day. Won 7,500 AED in prize money.

LEADERSHIP

Dubai College – Senior Prefect 2025-2026

Elected to the Senior Prefect team from 70+ applicants. Attend weekly meetings with school senior leadership team. Run monthly student parliament meetings for Year 11 students to address their concerns and suggestions for improving school life.

Dubai College Interschool Climate Competition – Founder 2024-2025

Launched DCICC, the UAE's first interschool climate competition, which brought together 150+ students from across the UAE to develop innovative solutions to sustainability issues within their own school communities. Led a team of 10 DC Sustainability Club members to manage organization of the event, sponsorship for prizes, communication with participants, and competition marketing.

Dubai College Puzzle Committee – Head 2024-2025

Elected to the Puzzle Committee after two-stage application process. Create and mark puzzle of the week problems available to all 1000+ students weekly. Helped design and mark problems for both national and school math competitions including Dubai Math Super League (DMSL) and DC Math Olympiads.

Dubai College – Barbarossa House Captain 2024-2025

Elected to the Barbarossa House Captain Team. Attended weekly meetings with house leadership team. Organized and participated in key house events including house music, sports day, house drama, and house challenges. Organized and spoke in termly house assemblies to 250+ students.

Dubai College Sustainability Club – Founder & President 2022-2026

Run weekly sessions for 70+ members including presentations, debates, project work, and guest speakers. Launched DC Sustainability Blog and DC Sustainability Magazine. Organized DC E-Waste Campaign (320kg collected and recycled). Led team of developers to build DC Carshare – app to encourage carpooling within DC community to reduce transport emissions.

Dubai College Sustainability Competition – Organizer 2023

Organized the first DC Sustainability Competition for students to present their ideas on how to make DC sustainable. Sponsored a total prize pool of 1000 AED using prize money from the Formula DMU Competition. Worked with Metanoia to implement the ideas: solar panels, composting farms, curriculum changes, E-buses.

RESEARCH

Cambridge Center for International Research (CCIR) – Student Researcher 2025

Selected to join the CCIR program after a competitive two-stage application process. Worked with Dr. Advait Sarkar (University of Cambridge) to design a human-computer-interaction study. Built Markov Chain melody composition software using Python, conducted a user study with N=12 participants, and analyzed the results using qualitative thematic analysis. Final paper, "The Illusion of Control: Perceived versus Actual Control, Authorship, and Agency in Generative Music Systems", was accepted to the CCIR Symposium 2025.

EpiMuse - Founder 2024-2025

Building on my research at Neuropedia, built EpiMuse – a machine learning webapp for customized music therapy for epileptic patients. Currently running study at Neuropedia to test clinical effectiveness of EpiMuse in improving the lives of patients with epilepsy. Concept paper was accepted to MIT URTC 2025.

Neuropedia – Research Internship 2024-2025

Conducted primary research study to examine the effects of listening to Mozart's K.448 on the artifact load and sleep onset latency of EEGs of patients of epilepsy (N=13). Paper was accepted to Neuropedicon 2026 – UAE's leading neuroscience conference.

Metanoia – Research Internship

2023-2024

Worked with Metanoia, an HK-based sustainability consultancy firm, on their sustainability audits for several international client schools, including DC. Collected and analyzed primary data from client schools, wrote sections for the DC audit report, and invited to write opening remarks for the DC report.

MUSIC

Piano

Working towards ABRSM Grade 8 Exam & ARSM Diploma in Piano Performance.

Drumkit

Passed Grade 7 TCL Rock and Pop Exam. Working towards Grade 8 TCL Rock and Pop Exam.

Tuned Percussion

Self-taught percussionist playing marimba, xylophone, glockenspiel, and vibraphone.

Music Theory

Passed ABRSM Grade 5 Exam in Music Theory.

Examinations:

GCSE Music	2024
Trinity Rock & Pop Grade 7 Drums Exam	2022
ABRSM Grade 5 Music Theory Exam	2019

Achievements and Extended Work:

UAE National Youth Orchestra (NYO) – Percussionist	2024-2025
Performed 6x concerts at Dubai Opera and Viennese Masters Invitational Concert at Carnegie Hall. Performed solo marimba concerto at Dubai Opera with NYO as a NYO Concerto Competition 2025 Finalist.	
Dubai College House Music Competition – Finalist.	2024
Finalist in the DC House Music Competition for my performance on the piano.	
Young Musicians of the Gulf (YMoG) 2024 – Percussion Award	2024
Received the YMoG Lifetime Percussion Award for my performance on the marimba.	
PPR – Creator of the Jingle	2021
Invited to compose the intro/outro jingle of the PPR group's podcast.	
Dubai College Bands/Orchestras	2022-2024
Performed as a percussionist and/or pianist for several of DC's invite-only bands/orchestras: symphony orchestra, concert band, jazz band, trad jazz band, percussion ensemble.	
Poor Form	2022-Present
Founded rock and pop band Poor Form at Dubai College. Performed 6+ gigs at school to audiences of 1000+ combined.	

CERTIFICATIONS

Brown Pre-College: Alternative Energy Engineering – An Introduction	2023
IBM Machine Learning with Python: A Practical Introduction	2022
W3Schools Learn Python	2021
W3Schools Learn JavaScript	2021