

Ali Abdullah

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EDUCATION

Colgate University, Hamilton, NY

August 2028

- **Bachelor of Arts.** Intended Majors: Computer Science, Applied Mathematics. **GPA:** 4.00/4.00
- Relevant coursework: Calculus III, Linear Algebra, CS 101, CS 102, Data Structures and Algorithms, CS50x, Building LLM Applications with Prompt Engineering
- Alumni Memorial Scholar - 1 of 16 among 829 Students

DISTINCTIONS/HONORS

- Honorable Mention - International Tournament for Young Mathematicians (1 of 6 rep. Pakistan team) **December 2024**
- Directors Award for Academic Excellence (Given to 2 student out of 350) **May 2024**
- Bronze Medal Among 2200 Competitors at the Singapore International Mathematics Olympiad **July 2023**
- First in Province(Punjab) in Additional Mathematics, First in Punjab Across 5 AS Level Subjects **May 2023**
- 3rd in the Country at the American Mathematics Olympiad **November 2022**
- Aitchison College Haji Sulaiman Medal For Best in Computer Science and Additional Mathematics among 300 **March 2022**

RESEARCH EXPERIENCE

Summer Research, Colgate University, Hamilton, NY

May – July 2025

- Designed historically accurate 3D reconstructions of ancient cities — including Noh Kuh, Tenochtitlán, and Teotihuacán — for interdisciplinary courses across History, Anthropology, and Archaeology.
- Developed high-fidelity assets and interactive environments utilizing Blender and Unreal Engine to produce immersive visualizations that enhance student engagement and provide accessible, research-informed virtual experiences of ancient civilizations.
- Collaborated with faculty and incorporated independent research to create accurate renders that align visualizations with curriculum goals and integrate them seamlessly into lectures, workshops, and public presentations.

Research Scholar, Polygence, Remote

June 2023

- Selected for a competitive Stanford-affiliated research program to conduct independent AI research under the guidance of a PhD mentor.
- Primary author of “Biases in Judicial AI: A Proposed Methodology for Combatting Biases”, proposing a multi-model ensemble architecture (Coordinated Multiple Models) to improve fairness and reliability in algorithmic decision-making systems.
- Engineered a theoretical framework for bias mitigation using model heterogeneity, decision aggregation algorithms, and static vs. dynamic model updating strategies.
- Applied interdisciplinary methods spanning AI ethics, ML interpretability, and legal systems to design scalable protocols for high-stakes AI deployment.

Research Fellow, National University of Science and Technology, Pakistan

June 2022

- Selected as 1 of 30 students nationwide (from 1,000+ applicants) for Pakistan Innovation Foundation’s National Engineering STEM School — a flagship, merit-based research program hosted at NUST-EME.
- Completed 12 advanced STEM assessments and 2 technical essays as part of a multi-stage national screening process.
- Attended 10-day residential research bootcamp featuring hands-on labs, expert-led workshops, and applied engineering challenges in robotics, fluid dynamics, electromechanical systems, and circuit design.
- Designed and prototyped a fully functional automated greenhouse using Arduino, integrating real-time temperature/humidity sensors with web-connected microcontrollers to display live environmental data on a locally hosted HTML dashboard.

WORK EXPERIENCE

Immersive Visualization Developer, Ho Tung Visualization Lab, Colgate University, NY

August 2024 – Present

- Created high-poly 3D models optimized for real-time rendering, emphasizing meticulously clean mesh topology, UV layouts, and LOD (Level of Detail) workflows using Blender and Unreal Engine 5
- Hosted dome shows and gave live sky talks to audiences of up to 50 children and adults, making astronomy and cultural heritage engaging and accessible to diverse visitors.
- Conducted interactive educational demonstrations for school groups of 60+ students, helping them explore STEM and historical topics through hands-on, visual learning experiences.

LEADERSHIP

Captain, Colgate Cricket Team, Colgate University, NY

May 2025 – Present

- Appointed as team captain in recognition of ongoing commitment to the club and consistent leadership as a core team member.
- Currently planning upcoming season goals focused on player development, competitive expansion, and deepening cricket’s presence within the Colgate community.

Student Government Executive & Math Club President, International School Lahore

August 2023 – May 2024

- Served as liaison between school administration and a student body of 1,500+, advocating for student needs and academic initiatives.
- Led and mentored 250+ students through roles in the Student Council and Math Club, overseeing academic coaching, event planning, and inter-school collaboration.

TECHNICAL SKILLS & CERTIFICATIONS

Programming/IDEs: Python, Langchain, Java, C, C++, Javascript, CSS, HTML, PyCharm, Visual Studio Code, Visual Studio, Git

Softwares/OS: Unreal Engine, Blender, Excel, Word, Google Workspace, Photoshop, Premiere Pro