

EKNOOR KAUR SANDHU

Chandigarh, India | eknoorksandhu@gmail.com | eknoor.xyz

Computational biology | Biomedical AI | Sustainable agriculture | Community-centered leadership

Testing	Academics	Leadership	Languages
AP 5: Calculus BC, Microeconomics AP 4: Biology, Computer Science A, Chemistry SAT 1480	Grade 12 predicted: 96-98% Grade 11 final: 96.8%	Head Girl Environment Club President	English, Punjabi, Hindi, French

EDUCATION

SGGS Collegiate Public School, Chandigarh, India | CBSE; expected graduation May 2027

- Grade 12 subjects: Biology, Mathematics, Artificial Intelligence, Economics, English.
- Transferred after Grade 10 from Strawberry Fields School to pursue Bio-Math-AI-Econ path rather than a single pre-med or engineering track.

RESEARCH AND TECHNICAL WORK

Sugarcane Harvest and Field Mapping Research | Plaksha University and DronaMaps | Grades 11-12

- Began with a practical question: could AI help sugarcane mills plan harvest timing for farmers by reading satellite/drone imagery, crop signals, and field logistics?
- After an agronomist challenged the model, learned that visible leaf color cannot prove biochemical sucrose maturity; shifted toward grounded field evidence.

Silver Nanoparticle-Silk Fibroin Hydrogels | Research Intern, Plaksha University | Grade 12

- Studied cocoon-derived silk fibroin hydrogels loaded with silver nanoparticles as wound-care biomaterials, tested their release, and antibacterial behavior.
- Learned that "more silver" is not automatically better if aggregation limits diffusion and biological usefulness.

Bioinformatics | Self-directed and mentored learning | Grades 11-12

- Learned BLAST, sequence alignment, phylogenetic reasoning, and algorithmic genomics to understand the protein sequences behind silk fibroin.
- Took online courses Bioinformatics and Algorithmic Genomics from UC San Diego and Johns Hopkins respectively.

Independent Coding | Self-directed and mentored learning | Grades 9-12

- pdf-repeat-remover: Built Python/perceptual-hashing tool to convert lecture videos into concise screenshot-based PDFs for AP prep and annotation.
- Dance-face-detect: Built TensorFlow tool to identify face-visible frames during Kathak spins, connecting dance practice with computer vision.
- Po-di-ng: Built multiplayer Pong in Odin/Raylib with TCP networking and game state synchronization.
- Fast-todo: Built RESTful Todo API with FastAPI and SQLite to practice backend design, CRUD, and database integration

LEADERSHIP AND COMMUNITY IMPACT

Head Girl / Student Council Leader | SGGS Collegiate Public School | Grade 12

- Represented student body in leadership forums and coordinated student committees, assemblies, service drives, fundraising, and school-culture programming.

Green Campus Programme and Environment Club | President; APSWDP climate education network

- Helped turn climate awareness drive across 29 schools into a student-led audit model tracking lights/fans, waste segregation, single-use plastic, and recognition for practical habit change.
- Nominated for CoP 31 for my social and environment work.

APSWDP Volunteer, Intern, and Master Trainer | Association of Professional Social Workers and Development Practitioners | Grade 8-present

- Supported supervised, confidential outreach documentation and follow-ups for female sex workers, transgender persons, and other vulnerable communities in Chandigarh.
- Organized action points related to clinic referrals, HIV/STI testing, identity documents, child education support, welfare schemes, legal awareness, and livelihood pathways.

HONORS, ARTS, PROGRAMS, AND SKILLS

National Scholarship in Kathak | *Cultural Talent Search Scholarship Scheme, Ministry of Culture* - Classical dance scholarship holder; Prachin Kala Kendra First Division

Dance Leadership and Outreach - Dance Club leader; organized rehearsals, environmental street performances, and training support for younger and under-resourced students.

Selected Programs - Young Technology Scholars, Plaksha University; Punjab Innovation Mission entrepreneurship/Labelerr AI internship.

Selected Coursework - Harvard CS50; MIT OCW Brains, Minds and Machines; Linear Algebra; Statistics.

Technical Skills - Python, TensorFlow, Java, computer vision, geospatial data, satellite/UAV imagery, visible vegetation indices, basic bioinformatics, statistics, and data interpretation.