
Skylar Schulsohn

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Portfolio: <https://skylar.rocks>

Education

High School for Environmental Studies — Expected June 2026

GPA: 100.63% | AP: Biology, Literature, World History, CS Principles, Government, Calculus AB

Carnegie Mellon University — Pre-College Computational Biology (Summer 2025)

- One of 97 students admitted from a pool of 300+ applicants
 - Conducted wet-lab experiments (PCR, sequencing, antibiotic resistance)
 - Implemented computational pipelines: sequence alignment, genome assembly, variant tracking
 - Learned robotics, automation, and machine learning for experimental design
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Research & Projects

LearnLoom — Literacy & Grammar Web App

- Built Next.js + Prisma platform supporting text-to-speech, grammar quizzes, and personalized reading tools.
- Privacy-first: anonymous codes, password-locked uploads, and progress tracking.
- Piloted in classrooms as a Tier 2 literacy intervention.

Independent Bioinformatics Portfolio (2024–Present)

- *Circadian Genes in Pancreatic Cancer*: Analyzed TCGA RNA-seq; identified significant dysregulation of RAB24 (↓) and WDR75 (↑); visualized with volcano plots/boxplots.
- *Tumor vs. Fetal Mitosis*: Compared ~9,000 TCGA tumor samples with fetal RNA-seq; found tumors cluster with high-proliferation fetal tissues; identified markers (MKI67, PLK1).
- *Breast Cancer Subtypes*: Used EdgeR/limma-voom; revealed mitotic gene enrichment and lipid metabolism shifts.

Transcriptome Explorer — Bioinformatics Web App

- React + FastAPI app for PCA, differential expression, and enrichment of RNA-seq data.
- Features: volcano plots, metadata validation, CSV export; UMAP and session persistence in development.

Other Projects

- *OpenBio Tools*: Modular React/FastAPI toolkit (protein interaction maps, CRISPR guide picker, RNA-seq visualizer).
 - *Miranda*: AI legal rights chatbot (Gradio backend + React UI); presented at Apple Fifth Avenue.
 - *OurChoice*: Abortion access data viz (100+ plots, 10,000+ viewers); raised awareness post-Roe.
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Leadership & Activities

- **Peer Tutoring Club — President**: Lead weekly tutoring; built system to assign tutors and track progress.
 - **Coding Club — President**: Teach JS/Python; guide peers in personal projects and portfolios.
 - **Student Council — Vice President**: Represented class, organized campaigns and initiatives.
 - **National Honor Society — Community Relations Officer**: Advocated for inclusion, organized outreach.
 - **Robotics Club — Lead Programmer**: Developed autonomous systems in Python/Java; mentored peers.
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Experience

Student Intern — theCoderSchool (Aug 2025–Present)

Mentor students in Python/JS; facilitate projects and collaborative coding challenges.

Private Chemistry Tutor (\$75/hr) (Jan–May 2025)

Designed review materials; helped students improve mastery in stoichiometry, kinetics, and equilibrium.

Volunteer Roles: Discovery Guide (Central Park Zoo), Voter Registration Organizer, Phone Banking (AZ Midterms).

Awards & Honors

- AP Scholar with Honor (2025)
- Winner, theCoderSchool National Python Contest (2025)

- Scholastic Writing Awards: Gold & Silver Keys (2024)
 - College Board National Recognition Program (2025)
 - Leadership Award, Outstanding Academic Achievement, Summa Cum Laude
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Skills

- **Programming:** Python (Pandas, SciPy, scikit-learn), JavaScript, React, FastAPI, SQL, HTML/CSS, Git/GitHub
- **Bioinformatics:** RNA-seq, PCA, DE analysis, enrichment (g:Profiler), data visualization (Matplotlib, Seaborn, ArcGIS, Recharts)
- **Tools:** Jupyter/Colab, Vercel, Render, Tailwind
- **Communication & Leadership:** Award-winning writer, public presenter, president of multiple clubs