Akul Saxena

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EDUCATION

University of Texas at Austin, Austin, TX — *Aug 2022 - May 2026*

B.S. in Computational Biology

Relevant Coursework: Comp. Biology, Biostatistics, Bioinformatics (Graduate)

B.S. in Mathematics

Relevant Coursework: Linear Algebra 1&2, Probability, Discrete Math, Differential Equations, Numerical Methods, Math for M.L., Geometric Foundations of M.L.

Minor: Computer Science

Relevant Coursework: Data Analytics, Software Design, Data Viz., Software Engineering I

TECHNICAL SKILLS

Programming: Python, R, Java, MATLAB, Javascript, LaTeX, Processing
Data Science & ML: Deep Learning (PyTorch/TensorFlow), Generative AI (Diffusion Models), Computer Vision, Alignment Softwares (BWA, STAR, Kallisto), R Shiny + Markdown
Web Development: React, Redux, Node.js
Languages: English (Native), Hindi (Fluent), Spanish (Conversational)

EXPERIENCE

Undergraduate Researcher, DMIC Lab — *[June 2025] - Present*

UT Austin Biomedical Engineering

- Leading a project to adapt generative AI models (Stable Diffusion) to synthesize high-resolution CT scans of lungs with fibrosis to augment scarce training datasets.
- Leading the development and training of a SOTA deformable image registration (DIR) model for aligning inhale-exhale lung CT scans.

Research Assistant — *Oct 2023 - June 2025*

Houston Methodist (with Dr. Prashant Dogra), Remote

- Collaborated on the mathematical modeling and simulation of intrahepatic cholangiocarcinoma (ICC) and its associated pharmacokinetics.
- Performed a meta-analysis of pharmacokinetic data from over 500 studies to characterize nanoparticle biodistribution, employing non-compartmental analysis (NCA) and clustering techniques to rationally inform design.

Undergraduate Researcher and Teaching Assistant *Aug 2022 - June 2024*
UT Austin Freshman Research Initiative

- Performed bioinformatic analyses of 'omics-level data using machine learning, differential expression, and clustering approaches.
- Investigated evolutionary decay by aligning stickleback Tag-Seq reads to reference transcriptomes using Kallisto, BWA, and STAR.
- TA'ed undergraduate research course with
  30 students

Biological Researcher *Jun 2021 - Jul 2021*
Summer Science Program, Purdue University

- Prestigious pre-college summer research program (¡10% acceptance rate)
- Utilized molecular modeling software to identify potential inhibitors for fungal enzymes responsible for crop failures.
- Authored first complete research paper on findings from start to finish.

ACTIVITIES & AWARDS

Society of Women Engineers (SWE) at UT *September 2025 - Present*
HeForSWE

- Worked to recruit and retain male engineers into SWE to grow male allyship in STEM and raise awareness about gender inequality/biases
- Organized an allyship panel to discuss advice and experiences on how to be an effective ally and support the inclusion of women in academic and professional spaces.

UT Programming Contest
Member

- Competed in multiple programming contests using Java, Python, and C++.
- Placed in the top 3 in multiple university-level competitions.

UT Quizbowl *Aug 2022 - May 2023*
Member

- Helped Texas A Team place in top 32 at the Intercollegiate Championship Tournament (ICT) Division I.

References available upon request.