

DIVYANSHU TANDON

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EDUCATION

Arizona State University (ASU), Tempe, Arizona

August 2027

Bachelor of Science in Computer Science

- ♦ *Computer Organization and Assembly Language Programming* ♦ *Object Oriented Programming & Data Structures*
- ♦ *Fundamentals of Cybersecurity* ♦ *Probability and Statistics* ♦ *Data Structures and Algorithms* ♦ *Operating Systems*

SKILLS

Python, Java, C, C++, JavaScript, TypeScript, SQL, HTML/CSS, React, FastAPI, REST APIs, NumPy, pandas, h5py, PyQt / PySide, Linux, Bash / Shell Scripting, Git, GitHub, GitLab, MySQL

WORK EXPERIENCE

Research Assistant, BDI Biodesign - Center for Applied Structural Discovery, ASU **Sept 2025 - Present**

- ♦ *Processed liquid microjet imaging datasets and applied Python-based analysis to support experimental evaluation.*
- ♦ *Supported experimental instrumentation setup and calibration for high-speed imaging workflows.*
- ♦ *Coordinated lab operations and data collection logistics across ongoing research experiments.*

Undergraduate Researcher, CXFEL (Compact X-ray Free Electron Laser), ASU **May 2024 - Present**

- ♦ *Developed Python tools with NumPy and PyQt to optimize computational workflows for biomolecular imaging.*
- ♦ *Contributed to data analysis and automation pipelines supporting research at the Linac Coherent Light Source (LCLS) and ASU Compact X-ray Light Source (CXLS).*

- ♦ *Implemented advanced algorithms to optimize data processing for X-ray diffractive imaging, contributing to experimental.*

Summer Researcher, LCLS(Linac Coherent Light Source), SLAC National Accelerator Laboratory **July 2025**

- ♦ *Operated and optimized ultra-thin sheet-jet injectors for in-solution Single-Particle Imaging (SPI) of high-concentration biological macromolecules, achieving stable delivery and minimal background scattering.*
- ♦ *Assisted in data acquisition and detector configuration, enabling low-q speckle capture from particles ≤ 30 nm and recording promising SAXS and single-particle diffraction patterns.*
- ♦ *Collaborated with a multi-institutional team to coordinate beamline operations and document experimental results.*

Data Analyst, MaRTy Fieldwork and Urban Data Collection, ASU **May 2024 - July 2024**

- ♦ *Directed urban fieldwork and collected MaRTy data for precise shade analysis, demonstrating dedication to thorough research.*
- ♦ *Applied advanced stats to validate MaRTy temperature data, confirming shade's urban heat mitigation.*
- ♦ *Transformed MaRTy data into actionable insights, informing Shade Lab-led urban planning for sustainable heat resilience*

PROJECTS

Reborn - Scientific Visualization Framework **June 2025 - Present**

- ♦ *Enhanced an open-source Python scientific computing framework for processing, visualizing, and analyzing X-ray diffraction detector data from X-ray Free Electron Laser (XFEL) experiments used in structural biology and ultrafast imaging research.*
- ♦ *Extended the Qt-based PADView interface by improving detector ring annotation, labeling, and interactive visualizations.*
- ♦ *Diagnosed and resolved cross-environment compatibility, dependency, and rendering issues involving PyQt/PySide scientific software stacks in Linux development environments.*

CoverMyPharma - Full-Stack Healthcare Policy Platform **May 2026 - May 2026**

- ♦ *Built a healthcare policy platform using React and FastAPI to search, analyze, and retrieve healthcare coverage information.*
- ♦ *Implemented secure Auth0 authentication, protected REST APIs, and frontend-backend integration for dynamic user workflows.*
- ♦ *Integrated AI-powered PDF document analysis to extract medical policy information from uploaded insurer documents.*

Microjet Image Analysis for XFEL Sample Delivery **February 2026 - April 2026**

- ♦ *Developed Python tools to analyze XFEL imaging data for liquid microjet characterization in sample delivery experiments.*
- ♦ *Implemented image processing and cross-correlation algorithms to compute jet velocity, diameter, breakup behavior, and angle.*
- ♦ *Automated preprocessing, metadata extraction, and visualization workflows for nozzle benchmarking and experimental analysis.*

Web-Based Q&A Platform – Full-Stack Java Application **Jan 2025 - May 2025**

- ♦ *Designed and implemented a multi-role Q&A system with CRUD operations and input validation using a Finite State Machine.*
- ♦ *Built features like private messaging, reviewer approval, and trust-based review filtering.*
- ♦ *Applied UML design, Javadoc documentation, and JUnit testing to ensure system reliability.*

Graph Routing & Pathfinding Engine **May 2025 - June 2025**

- ♦ *Developed a graph-based routing engine to compute shortest paths between connected nodes using pathfinding algorithms.*
- ♦ *Implemented Dijkstra's algorithm with adjacency lists and min-heap optimization for scalable shortest path computation.*
- ♦ *Built a command-line interface for loading graph datasets, executing routing operations, and reconstructing traversal paths.*

PUBLICATIONS

Ansari, A. et al. (incl. Divyanshu Tandon) "Synchronized droplet nozzle for in-vacuum X-ray scattering experiments," Lab on a Chip, Advance Article, 2025, DOI: [10.1039/D5LC00063G](https://doi.org/10.1039/D5LC00063G).