

Kanishk Sachdev

(814) 441-0134 | kanishksachdev@gmail.com | [linkedin.com/in/kanishk-sachdev/](https://www.linkedin.com/in/kanishk-sachdev/) | github.com/kensac

Education

The Pennsylvania State University

Bachelor of Science in Computer Science and Bachelor of Science in Mathematics

Minor in Engineering Leadership Development

Expected Graduation: May 2026

University Park, PA

Skills

Languages: Rust, Go, TypeScript, JavaScript, Python, Java, C/C++, SQL, HTML/CSS

Frameworks and Tools: Nest.js, Prisma, Django, OpenCV, Knex, Next.js, Vue, Node.js, Express, React, socket.io, Git

Cloud and DevOps: GCP, AWS, Terraform, Docker, Kubernetes, Firebase

Experience

Special Projects Developer

Penn State THON™

May 2025 – Present

University Park, PA

- Developed Warewolf, an inventory management tool for THON, to handle 10,000+ merchandise and supply orders.
- Integrated TypeScript into the Vue frontend to improve code safety, developer experience, and reduce bugs.
- Added location-tracking and reservation modules for reusable inventory, optimizing asset use during peak THON events.
- Reduced build and test times by 57%, from 3.5 minutes to 1.5 minutes.

Software Development Engineering Intern

Vitro

May 2024 – August 2024

Pittsburgh, PA

- Migrated native tracking app into cloud microservices with React, Next.js, and Docker, enhancing scalability and fault isolation.
- Built Flask REST API with image pre-processing, improving edge detection accuracy by 20% and cutting resource use by 40%.
- Deployed on Azure App Service, reducing infrastructure costs by 15% and maintenance time by 20%.

Software Development Engineering Intern

Vitro

May 2023 – August 2023

Pittsburgh, PA

- Developed a real-time safety-critical glass edge detection and tracking system using Python and OpenCV
- Implemented a Multi-Threading processing algorithm on 16 camera feeds, saving \$500,000+ on infrastructure upgrades
- Integrated with OPC UA for testing and data analysis; deployed to 14 locations, increasing reliability by 30%.

Director of Technology

HackPSU

January 2023 – Present

University Park, PA

- Led a 15-member team to develop the registration platform and admin dashboard, used by 1000+ hackathon participants
- Migrated GCP infrastructure to Terraform (Cloud Run, Cloud SQL, Compute Engine) and implemented CI/CD pipelines, accelerating deployments by 40% and cutting errors by 25%.
- Built internal financial dashboard and automated reimbursement system to streamline expense tracking.
- Refactored backend API in Nest.js and optimized database queries, boosting performance and reliability by 30%.

Teaching Assistant

The Pennsylvania State University

December 2022 – Present

University Park, PA

- Taught CMPSC 263 to 100+ students, and held office hours to reinforce Web Development and Blockchain fundamentals.
- Created and graded course assignments and projects to boost student engagement and improve course success rates.

Projects

Physics Engine

December 2024 – Present

- Created a real-time physics engine in Rust with gravity, rigid-body dynamics, and fixed-timestep integration.
- Developed broad-phase and narrow-phase collision detection (AABB, circle, polygon) with resolution, friction, and restitution.
- Optimized performance via spatial hashing and multi-threading to maintain 60 FPS with 100+ active objects.

Map-rs

March 2024 – August 2024

- Parsed OpenStreetMap data to render 2D roads, buildings, waterways, and train lines in a Rust and OpenGL app.
- Implemented binary tile caching for sub-100 ms rendering and smooth panning/zooming.
- Enhanced A* routing with momentum and customizable cost metrics for multimodal navigation.

Leadership

Vice President

South Asian Students Association

May 2023 – May 2024

University Park, PA

- Led a team of 30 in organizing events for 600+ members of the South Asian community with an annual budget of \$100,000
- Coordinated with 40+ vendors, artists, and organizations to facilitate 15 successful events and enhance community engagement