

ROY VAID

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EDUCATION

University of California, Santa Barbara

Bachelor of Science in Physics

Phillips Exeter Academy

High School Diploma

- GPA: 10.24 / 11 (unweighted) | SAT: 1580 | Highest Honors. Relevant coursework: Multivariable Calculus, Data Structures & Algorithms, Database & Web Dev, Advanced Physics.

Expected Jun 2030

Santa Barbara, CA

Sep 2022 – Jun 2026

Exeter, NH

PUBLICATIONS & PRESENTATIONS

Neural Information Processing Systems (NeurIPS)

Nemo Workshop — Poster Presentation

- Roy Vaid.** “Causal Calibration of Symbolic State in Embodied Language Agents.” Accepted for a poster presentation.

Dec 2026

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Workshop on Insect-Scale Autonomy — Spotlight Talk & Poster Presentation

- Roy Vaid.** “How Much Route Fits in 3.2 kB? Capacity Limits of Quantized Kenyon-Cell Familiarity.” Accepted for a 4-minute spotlight talk and poster presentation.

Oct 2026

Pittsburgh, PA

RESEARCH EXPERIENCE

Machine Learning Research Intern

PACS AI Group | Medical Imaging Research, Dr. Jiaofeng Xu

Multimodal chest CT reporting and clinical workflow integration (PyTorch, TransUNet, CLIP, DICOM)

- Built λ -AttentionNet, a multimodal deep-learning model that drafts radiology reports from chest CT scans, integrated into radiologists’ clinical workflow through the company’s internal API.
- Combined TransUNet (vision) and CLIP (vision-language) outputs and designed an adaptive attention module to weight heterogeneous imaging and text data, with per-prediction confidence scores.
- Engineered the data pipeline in PyTorch: normalized DICOM scans to uniform voxel resolution, segmented anatomical regions, and wrote OCR scripts to parse reports into seven structured sections.
- Validated on 1,243 chest CTs across two clinical sites in a double-blind radiologist study: raised report accuracy from 72% to 92% and cut reporting time 42% vs. non-adaptive baselines.

Aug 2024 – Present

Boston, MA & Remote

Astrophysics Researcher

Summer Science Program International | Astrophysics, Georgia College & State University

Five-week program in optical astrometry and orbit determination (Python, AstroImageJ, SAOImage DS9)

- Earned 1 of 36 places in the program’s international cohort.
- Observed near-Earth asteroid 2009 KD5 on three nights and published the resulting astrometry through the [Minor Planet Center](#).
- Wrote Python code using Gauss’s method and Monte Carlo sampling to estimate six orbital elements and quantify uncertainty.

Jun 2025 – Jul 2025

Milledgeville, GA

Research Intern

UCSF Department of Radiology & Biomedical Imaging | Contrast & CT Research, Dr. Benjamin Yeh

Four-week CT contrast, segmentation, and reconstruction internship (MONAI, 3D Slicer, DICOM)

- Processed CT DICOM scans for contrast-agent studies and ran denoising and 3D reconstruction tests.
- Segmented anatomical regions with MONAI and 3D Slicer and presented findings at a UCSF research seminar.

Jul 2024

San Francisco, CA

PROJECT EXPERIENCE

Sonist | Full-Stack Developer

- Built a real-time platform that transcribes live audio and submits risk-controlled orders to Kalshi and Polymarket; integrated live L2 order books and achieved 238 ms word-to-order latency, enabling programmatic latency arbitrage as mention markets reprice.

SourceVR & Qualyx | Developer

- Built standalone VR ports for Meta Quest and PICO, reaching 2,900+ and 1,000+ APK downloads plus 50+ and 30+ GitHub stars, respectively; SourceVR drew 3,400+ repository views.

LEADERSHIP EXPERIENCE

- Founder & Director, Borrow the Sky** (10th–12th). Built a library astronomy-access program; assembled telescopes and ran public stargazing nights for local youth.
- Co-Head, Exeter Astronomy Club** (12th). Co-built a satellite data viewer ([geotiles.tech](#)) and grew an online member forum into a club-wide research project.
- Co-Head, Exeter Investment Society** (12th); **Co-Head, Exeter Philosophy Club** (11th).
- Math Tutor, Mathnasium Learning Center.** Tutored K–12 students from fundamentals through calculus.

SKILLS

- Languages:** Python, Java, Kotlin, SQL
- Frameworks & Libraries:** PyTorch, MONAI, TransUNet, CLIP
- Tools:** Git, AWS, 3D Slicer, DICOM imaging, OCR pipelines
- Additional languages:** English, Spanish, Mandarin (conversational), Latin (reading)

AWARDS & HONORS

- U.S. Presidential Scholars Program Semifinalist**, 1 of 627 nationwide (May 2026)
- John and Irene MacKenty Astronomy Prize**, Phillips Exeter Academy (Jun 2026)
- 2nd Place, Computational & Informatics Science**, plus **Office of Naval Research Award**, NHSEE (Mar 2025)
- National Merit Scholarship Program**, Commended Student (Sep 2025)
- National Latin Exam**, Gold Medalist, *summa cum laude* (Apr 2024)
- Maurice R. Scharff Prize**, Phillips Exeter Academy (Jun 2024)