

RICHIK PAL

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EDUCATION

University of California, Berkeley

AUG 2022 - May 2026

B.A. Computer Science | B.A., Molecular and Cellular Biology, Dean's list

- Courses: Machine Learning, Artificial Intelligence, CyberSecurity, Data Structures, Efficiency in Algorithms, Computer Architecture, Design Information Devices & Systems, Discrete Math, Probability, Linear Algebra, Multivariable Calculus
- The Leadership Award Scholar

RESEARCH/ WORK EXPERIENCE

SDE Intern, Amazon Q, Amazon Web Services (AWS)

MAY–AUG 2024, (INCOMING) 2025

- Construct data ingestion pipelines for creating customizations over foundational LLMs
- Skills: AWS Batch, EC2, ECS, Fargate, Lambdas, Amazon Q, DynamoDB

Computational fMRI research, Gallant/CognAc Lab, UC Berkeley

AUG 2023–PRESENT

- Led the design of data collection for life-simulation game fMRI cognitive control study
- Analyzed brain images and BOLD signals using encoder/decoder models on social learning and cerebellar cognitive function

Computational Tardigrade Research, Kato Lab, UCSF

MAY 2023–PRESENT

- Developed automated pipelines for CRISPR knockout gene discovery
- Performed micro-injections for tardigrade transgenics, identified novel candidate promoters

Tutor for CS170, CS 61A, CS88, UC Berkeley

MAY 2023–PRESENT

- CS170: Efficient Algorithms & Intractability, CS61A, CS88: Introductory Python programming
- Developed course content and walkthrough videos for assignments and past exams
- Reviewed, developed, and graded exam questions and other course material

Topology and CAD Research, Sequin Lab, Berkeley EECS

DEC 2022–DEC 2023

- Modeled 3D mathematical knots (trefoil etc.) and 2-manifold surfaces
- Enhanced JIPCAD (Joint Interactive Procedural CAD) interface and features
- Independently improved b-spline end closure framework and slider capabilities

VOLUNTEERING

Controls & Computer Vision Lead, Underwater Robotics@Berkeley

JAN 2023–PRESENT

- Implemented control systems for autonomous underwater robot using ROS2
- Research in leading underwater computer vision techniques and optimal control hardware

Senior Mentor, CS 88, Computer Science Mentors, UC Berkeley

AUG 2022–DEC 2024

- Guided 4 junior mentors in weekly teaching demos to improve instruction and delivery
- Led weekly sections for groups of 5 students, who had little to no experience in CS
- Created worksheets and graded practice questions, co-developed content for review sessions

PROJECTS

Publication

OCT 2022–PRESENT

Pal A, Noble MA, Morales M, **Pal R**, Baumgartner M, Yang JW, Yim KM, Uebbing S, Noonan JP.

Resolving the three-dimensional interactome of Human Accelerated Regions (HARs) during human and chimpanzee neurodevelopment. [bioRxiv](#).(preprint) 2024. (In press at Cell)

ProtoDevAI, an AI biological lab protocol generator

JUNE 2023–PRESENT

- Developed a customizable, scalable tool to create biological protocols for wet-lab experiments
- Currently working on enhancing precision, introducing filters, and fine-tuning parameters

SKILLS

Languages: Python, Java, C, Typescript, React, Risc-V, SQL, HTML, CSS, LaTeX, JavaScript, ROS, Gazebo

Techniques: Website design, 3-D Modeling, CAD

Libraries: Matplotlib, Numpy, Pandas, SciPy, JUnit, RNA sequencing analysis libraries

Tools: AWS Cloud, Kubernetes, JIPCAD, Blender, GitHub, Microsoft Office, Google: Sheets, Slides, Docs