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 (Neuroscience)   **GPA 3.903**

– Courses: Robotics, Systems/Behavioral Neuroscience, Computational Biology Algorithms, Brain Imaging (MRI), Machine Learning, Artificial Intelligence & Agents, CyberSecurity, Data Structures, Efficiency in Algorithms, Computer Architecture, Information Devices, Signals & Systems, Discrete Math, Probability, Linear Algebra, Multivariable Calculus

– **Awards and honors: The Leadership Award Scholar, Dean's List**

WORK EXPERIENCE

SDE Intern, Amazon Q, Amazon Web Services (AWS)   May – Aug 2024, May – Aug 2025

– 2025: Develop multi-agent query rewriting workflow using Strands SDK and MCP tools to enrich context to LLMs from RAG retrieval

– 2024: Construct secure data ingestion pipelines to create enterprise level personalization over LLMs

– Skills: AWS Batch, EC2, ECS, Fargate, Lambdas, Amazon Q, DynamoDB, Strands

Course Staff: CS 194/196, CS170, CS 61A, CS88, UC Berkeley   May 2023 – Present

– CS 194/196: Agentic AI, CS170: Efficient Algorithms, CS61A, CS88: Intro programming

– Developed course content and walkthrough videos for assignments and past exams

– Developed and graded exam questions and reviewed Agentic AI Competition submissions

RESEARCH

Agentic AI Research, Dawn Song Lab, Berkeley RDI   Aug 2025 – Present

– Developed AgentTrace, a schema-based logging framework to enable real-time observability, accountability, and security of AI agents powered by LLMs

– Designed three-surface taxonomy (cognitive, operational, contextual) for comprehensive agent tracing

– Integrated OpenTelemetry–style distributed tracing and auto-instrumentation for Python agents

– Manuscript "*AgentTrace: A Structured Logging Framework for Agent System Observability*" accepted for presentation at the AAAI 2026 Workshop

Computational fMRI research, Gallant Lab, UC Berkeley   Aug 2023 – Present

– Use encoder/decoder models to study decision making and cognitive control using banded ridge regression and voxelwise encoding models on fMRI data

– Led the experiment design and data collection for life-simulation game for fMRI

Topology and CAD Research, Sequin Lab, Berkeley EECS   Dec 2022 – Dec 2023

– Modeled 3D mathematical knots (trefoil etc.) and 2-manifold surfaces

– Independently improved b-spline end closure framework and slider capabilities

Computational Tardigrade Research, Kato Lab, UCSF   May 2023–May 2024

– Developed automated pipelines for discovering CRISPR knockout gene candidates in tardigrades

– Performed micro-injections for tardigrade transgenics, identified novel candidate promoters

PUBLICATIONS

Pal A, Noble MA, Morales M, **Pal Richik**, ..., Noonan JP. "*Resolving the three-dimensional interactome of Human Accelerated Regions (HARs) during human and chimpanzee neurodevelopment*"

Oct 2023 – Dec 2024

- Associated with Noonan Lab, Yale University. Published at Cell. Link
- Automated RNA-seq analysis and visualization pipelines to study specific enhancer regions called Human Accelerated regions, analyzed human/primate data

PROJECTS AND VOLUNTEERING

Controls & Vision Lead, Underwater Robotics@Berkeley   Jan 2023 – Aug 2024

– 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

SKILLS

Languages	Python, Java, C, Typescript, React, Risc-V, SQL, HTML, Swift, 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 Services