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)   Dean's List (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: The Leadership Award Scholar

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

Tutor for CS170, CS 61A, CS88, UC Berkeley May 2023 – Present
- CS170: Efficient Algorithms & Intractability, CS61A, CS88: Intro Python programming
- Developed course content and walkthrough videos for assignments and past exams
- Reviewed, developed, and graded exam questions and other course material

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 for scalable monitoring; implemented auto-instrumentation for Python agents with zero code changes
- Manuscript "*AgentTrace: A Structured Logging Framework for Agent System Observability*" currently under review for 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
- Enhanced JIPCAD (Joint Interactive Procedural CAD) interface and features
- Independently improved b-spline end closure framework and slider capabilities

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 2022 – 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, 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