

RAUNIT KOHLI

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WORK EXPERIENCE

Robotics Using Bayesian Inference Lab - UC San Diego

01/2021 – Present

Staff Machine Learning Researcher (Published)
San Diego, CA

- Spearheads implementation and tuning of Reinforcement Learning algorithms in PyTorch for robotic PiRat with Ros utilizing extensive neural and positional data from 2500+ rat experiments to mimic and predict multi-agent interactions.
- Enhances and refactors large-scale Computer Vision-based Node Tracking Software in C++ to validate statistical accuracy of Kinect Tracker, introducing new features & experiment parameter logging, leading to 550% processing speed.
- Translates and models numerical qualifications to interpretable results for publications by employing data libraries.
- Programs autonomous path-exploration algorithms using Hermite Splines and Pure Pursuit for robotic PiRat.
- Scripts pipelines & multi-tool workflows to easily apply statistical techniques for wrangling & analyzing variable datasets.
- Leads technical design and development for fully synchronized multi-modal Embedded-System including multiple machine-vision cameras, audio-capturers, depth-sensors, & physiological sensors aimed to host AI-powered classroom.

Data Annotation Tech

01/2024 – Present

AI Training Engineer
San Diego, CA

- Develops and implements novel diverse coding problems and solutions for emerging Large Language Model chatbots, encompassing a variety of programming aspects, ensuring high-quality instructional conversation and code snippets.
- Supervises and navigates AI models in intermediate-training stages to systematically utilize medium-sized (1000+) datasets through efficient exploratory data analysis to answer complex data-focused questions using Pandas and Numpy.
- Evaluates investigative chatbot design through practical testing strategies to ensure compliance with AI ethics and safety.

IBM (International Business Machines)

06/2023 – 09/2023

Automation and Testing Developer Intern
San Jose, CA

- Scripted in Ruby to automate API endpoint testing for entire IBM Aspera on Cloud Workflows App designed to automate workflows of global content transfer and exchange across on-premises and multi-cloud environments.
- Developed & documented comprehensive automated regression framework with 780+ API tests covering all endpoints.
- Identified 15+ critical issues/bugs on live production server, communicated with developers to determine ideal expected behavior, and raised issues in project management tools to expertly report relevant failure details.
- Executed entire development cycle to outline & implement API Endpoint Test Controller for collaborative QA repository.
- Contributed to global company-wide hackathon focused on emerging enterprise-ready watsonx AI platform.

Rocket Software

06/2022 – 09/2022

Software Engineering Intern
Boston, MA

- Launched project building foundational Unit Test regression framework to maximize Code Line Coverage.
- Achieved over 30% Line Coverage in live code base, surpassing initial annual Objective and Key Result goal of 10% and identifying multiple redundant external dependencies.
- Designed & presented operational model and corresponding research plan to implement Reinforcement Learning into MultiValue Database Performance tracking tool for 100% efficient Predictive Data Analytics and Error Identification.
- Piloted BASIC and Rocket Tools training series with senior engineer for MultiValue intern team by using Agile Workflow to deliver lesson plans highlighting introductory coding techniques for REST API and demonstrating Rocket products.

UC San Diego Cognitive Science

09/2022 – 12/2023

Data Science Teaching Assistant
San Diego, CA

- Created weekly section presentations, podcast to 800+ students, for content review and interactively guide students at all coding-experience levels through programming assignments by demonstrating live debugging and problem-solving.
- Formulated weekly exams, held tutoring sessions, scripted automated grading pipelines to optimize multi-LMS system.

TECHNICAL SKILLS

Languages: Python, Ruby, Java, C++, C, SQL; **Libraries:** Pandas, PyTorch, TensorFlow, Numpy, SciPy, HuggingFace
Agile/Tools: Atlassian (Jira, Confluence), Zenhub, Version-Control (Git, Github, Gitlab), BoxNote, Excel, Outlook, Webex
Courses/Skill: Deep Learning for NLP, Agile Methodology, Data Modeling, Advanced Topics LLMs, API Development, Supervised/Unsupervised ML, Neural Networks, Data Structures & Algorithms, Markov Decision Processes, CI/CD, AWS

EDUCATION

University of California – San Diego

09/2020 – 12/2023

Bachelor of Science, Machine Learning and Neural Computation

Major GPA: 3.91/4.0

Minor: Computer Science; **Program of Concentration:** Philosophy

Awards: President & Recruitment Advisor – Phi Sigma Pi National Honor Fraternity; Provost Honors – Warren