Nishit Dubey

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EDUCATION

University of California, Santa Cruz (UCSC) ***Expected Graduation: Mar 2025***

Bachelor's of Science in Computer Science | 4.0 GPA

SKILLS

Languages JavaScript · Python · C++ · C · Java

Software Linux · Kubernetes · TensorFlow · JupyterNotebook · Git · Bash · Pytorch

EXPERIENCE

Software Engineer ***Apr 2024 - Present***

Autonomous Car Development · UCSC Robotics

- Developing documentation to access software tools, reports, and continued project development
- Linking external sensors and inputs to deliver useable data for CNNs
- Using Linux environments to control and develop software

Full Stack Developer ***Sep 2024 - Dec 2024***

Lost@Cruz

- Maintaining consistent GIT for the entire team, handling merges, and creating standards
- Collaborated with back and frontend teams to ensure seamless feature integration and deployment.

Project Director ***Jan 2023 - May 2024***

Neon Navigator

- Orchestrating the project vision, outlining clear goals and milestones for the team to achieve
- Implementing effective communication and collaboration strategies to balance goals, while ensuring an environment that promoted creativity from all members
- Learning and Adapting to new technologies within Unity. Involved adapting and changing graphics frameworks and applying new tools to allow the project vision to come to reality

Software Engineering Tutor ***Mar 2024 - Present***

CS DEPT / ONLINE TEACHING

- Spearheaded workshops on compute/AI/ML and languages to hundreds of students

PROJECTS

Lost at Cruz | Team Project *(~100 hours)* - Lost@Cruz

- Handling API calls to services such as Node mailer and social media platforms
- Using React and HTML to design website UI and functionality
- Deploying Firebase backend to manage database and user authentication

Autonomous Car Development | UCSC Robotics - Cruz Control

- Training Carla agents to navigate through maps via direction and camera provision
- Creating and simplifying datasets from multiple input sources for training and testing

Hallucination Span Detection | Team Project *(~30 hours)*

- Fine-tuning existing LLMs to serve as critics to refine LLM outputs and quality
- Researching the development of reasoning capabilities in improving detail and correctness.
- Creating universal pipeline to deliver refined answers compared to baseline models.

Neon Navigator | Released Game *(~80 hours)* - Neon Navigator

- Developing core gameplay systems in Unity to create a 2.5D platformer
- Designed and implemented puzzle and level systems, utilizing advanced graphics extensions

AI/ML Model Creation and Preparations

- Implemented learning algorithms in Python for strategic decision-making in Pacman, and agent tasks.
- Conducted data analysis to create and preprocess datasets for machine learning models.
- Trained and evaluated classifiers to improve accuracy in prediction and decision-making tasks.

HTTP Server | *(~15 hours)*

- Building a multithreaded HTTP server in C++ using mutex locks in synchronization and thread safety.
- Deployed on Linux servers, integrating RPC for efficient inter-process communication.
- Optimized request handling to ensure high performance and scalability under heavy workloads.

Nano Interpreter + Type Checker | *(~10 hours)*

- Building interpreter in Haskell to ensure type safety and accurate program evaluation
- Implementing unification algorithms and inference mechanisms inspired by GHCi to handle complex systems