

# NISHIT DUBEY

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## Projects

### 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

### D\* Lite Bezier Planner, in preparation

- Developing path planning algorithms and integrating them into CARLA simulator
- Creating systems to automate obstacle introduction and tests for efficiency testing
- Precisely motivating vehicular movement to follow Bezier curves for motion

### Lost at 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

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

### HTTP Server

- Building a multithreaded HTTP server in C++ using mutex locks for 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.

### A.I. Pacman + ML Classifiers

- Implemented Q-learning and Minimax algorithms in Python for strategic decision-making in Pacman.
- 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.

### Nano Interpreter + Type Checker

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

## Education

**UC Santa Cruz • Computer Science •**  
**Graduation Date: 06/2025**

## Experience

### Developer • Autonomous Car Development • 04/2024 – Cont.

- 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 • Lost at Cruz • 09/2024 – 12/2024

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

### Project Director • Neon Navigator • 01/2023 – 05/2023

- 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 project vision to come to reality