

Rohan Siva

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EDUCATION

University of Texas at Austin

B.S. in Electrical and Computer Engineering Honors (ECE Honors); **GPA: 3.97/4.00**
Minor in Statistics and Data Science

Austin, TX

Expected May 2027

Relevant Coursework: Data Structures & Algorithms, Object Oriented Design, Data Science Principles, Data Science Lab, Probability & Statistics, Intro to Computing, Embedded Systems, Circuit Theory, Matrices, Linear Systems, Linear Algebra, Differential Equations, Discrete Math, Calculus I-III

SKILLS

Languages: Python, Java, C, C++, JavaScript, SQL, TypeScript, Swift, HTML, CSS, R, Assembly

Technologies: Git, ROS, React.js, Node.js, PostgreSQL, SpringBoot, Flask, FastAPI, CI/CD, AWS, Elasticsearch, Docker, Kubernetes, Postman, Selenium, GCP, Kafka, Carla, ROS, SLAM, nuScenes, Figma, Gradio

AI/ML: PyTorch, TensorFlow, Jax, Keras, Sklearn, Transformers, LangChain, LlamaIndex, Unslloth, DeepSpeed, VLA, SFT(LoRA/QLoRA), RL(GRPO/PPO), WandB, Diffusion, Spark, MapReduce, RL Gym, OpenCV

PUBLICATIONS

Bhatt, N. P., Yang, Y., **Siva, R.**, Milan, D., Topcu, U., & Wang, Z. “Know Where You’re Uncertain When Planning with Multimodal Foundation Models: A Formal Framework,” In Proceedings, **Conference on Machine Learning and Systems (MLSys)**, 2025. Oral Presentation. Available: arXiv:2411.01639

Bhatt, N. P., Yang, Y., **Siva, R.**, Samineni, P., Milan, D., Wang, Z., & Topcu, U. “VLN-Zero: Rapid Exploration and Cache-Enabled Neurosymbolic Vision-Language Planning for Zero-Shot Transfer in Robot Navigation,” Under Review, **IEEE International Conference on Robotics and Automation (ICRA 2026)**, 2026. Available: arXiv:2509.18592

Bhatt, N. P., Li, P., Gupta, K., **Siva, R.**, Milan, D., Hogue, A. T., Chinchali, S. P., Fridovich-Keil, D., Wang, Z., & Topcu, U. “UNCAP: Uncertainty-Guided Planning Using Natural Language Communication for Cooperative Autonomous Vehicles,” In Proceedings, **International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2026)**, 2026. Available: arXiv:2510.12992

Yang, Y., Bhatt, N. P., Samineni, P., **Siva, R.**, Wang, Z., & Topcu, U. “RepV: Safety-Separable Latent Spaces for Scalable Neurosymbolic Plan Verification,” Under Review, **Conference on Machine Learning and Systems (MLSys 2026)**. Available: arXiv:2510.26935

EXPERIENCE

VITA Lab @ UT Austin

Undergraduate Researcher

Austin, TX

Aug 2024 – Present

- Research in Embodied AI, Formal Methods & Planning/Perception under [Prof. Atlas Wang](#) and [Prof. Ufuk Topcu](#)
- 1. Fine-tuned LLaVA multimodal models on low-uncertainty data using LoRA quantization with DeepSpeed for distributed training, resulting in improved specification compliance by 5% & reduced decision variability by 40%
- 2. Designed a two-phase vision–language navigation framework combining SLAM based scene-graph generation & trajectory caching, achieving 2× success rate over SOTA zero-shot models & Sim2Real transfer via ROS
- 3. Developed an uncertainty-based vision–language framework enabling cooperative autonomous vehicles to exchange structured natural language messages, reducing bandwidth by 65% & decision uncertainty by 30%

PKU Lab @ Peking University

AI Researcher

Beijing, China (Remote)

May 2025 – Present

- Leading research advised by [Prof. Hao Tang](#) on integrating block-by-block diffusion into Chain-of-Thought reasoning for uncertainty-aware multimodal planning with real-time posterior variance feedback
- Designed parallelizable diffusion-based reasoning architecture replacing autoregressive CoT, reducing latency by up to 34% while improving reliability for VLM-driven autonomous driving

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| Statistical Learning & AI Group Lab @ UT Austin | Austin, Texas (Remote) |
| <i>Undergraduate Researcher</i> | <i>November 2025 – Present</i> |
| • Exploring custom GRPO implementations for NanoChat w/ pass@1024 evaluation under Prof. Qiang Liu | |
| Mercor AI | Remote |
| <i>Machine Learning Engineer (Contract)</i> | <i>Aug 2025 – Present</i> |
| • Developed plan–code pairs for ML engineering tasks derived from Kaggle competitions with verifiable outputs | |
| • Automated data generation and preprocessing pipelines, creating structured supervision signals for model training | |
| • Improved data generation & training speed by 50% through scalable dataset construction and validation tooling | |
| Cisco | San Jose, CA |
| <i>Machine Learning Intern</i> | <i>May 2025 – Nov 2025</i> |
| • Developed kRAIG, an AI agent converting natural language into executable Kubeflow Pipelines for ETL workflows | |
| • Deployed a RAG-based pipeline generator using Elasticsearch and safety guardrails for database operations | |
| • Integrated MCP Server w/ PostgreSQL & AWS tooling, automating direct ETL into enterprise data storages | |
| • Implemented CI/CD pipeline for Docker container deployment & automated unit tests w/ 90%+ code coverage | |
| IX (Information eXperience) Lab @ UT Austin | Austin, TX |
| <i>Undergraduate Researcher</i> | <i>Aug 2024 – May 2025</i> |
| • Led LLM integration under Prof. Jacek Gwizdka into interactive information retrieval interfaces using Python, Node.js, and the OpenAI API, enabling real-time query refinement through dynamic user feedback loops | |
| • Prototyped & tested multi-pane user interaction flows in Figma to support sequential querying w/ user studies | |
| • Evaluated AI-driven search efficiency & models through user-centered interface testing and optimization | |
| Canyon Technologies LLC | Austin, TX |
| <i>Software Engineering Backend Intern</i> | <i>May 2024 – Oct 2024</i> |
| • Built a cloud-based nzESL display management dashboard w/ SpringBoot, Docker & Postman for 1000+ users | |
| • Integrated display tags and BLOZI base stations to enable real-time updates, QR-codes, and label management | |
| • Designed and deployed a secure customer mailing & password system with Java and React.js using OWASP | |
| Keitt Lab @ UT Austin | Austin, TX |
| <i>Software Engineering Researcher</i> | <i>Nov 2023 – Jul 2024</i> |
| • Built low-power sensor mesh using XBee radios & time-synced Raspberry Pis for remote wildlife monitoring | |
| • Developed PyTorch acoustic detection system to identify bird species & location from chirp data w/ live analysis | |
| • Implemented distributed computing architecture for remote data collection, reducing latency by 46% | |
| SELECTED PROJECTS –  | |
| MoodScribe – Social Sidekick GitHub | |
| • Fine-tuned Llama 3.1 model for sentiment analysis with custom synthetically generated dataset using LoRA adapters, optimizing training with Unislot for memory reduction and FlashAttention for a 44% speedup | |
| Minerva – Study App GitHub | |
| • Built a full-stack AI study app using Flask + React, integrating Google Classroom API and an OpenAI & LlamaIndex RAG pipeline for personalized study features, including flashcards, quizzes and chatbot | |
| Medicina.ai – Health Risk Predictor GitHub | |
| • Designed full-stack health-risk prediction app w/ Python, HTML/CSS/JS & Flask using Random Forest & Logistic Regression to estimate diabetes & heart risk from user data, including data ingestion, preprocessing & inference UI | |
| Blackjack-RL – Deep RL Blackjack Agent GitHub | |
| • Developed a DQN-based RL agent using PyTorch and RLCARD, w/ experience replay, ϵ -greedy exploration, target networks, and reward-shaping to learn optimal strategies in Blackjack environments, with training pipeline | |