Vedant Srinivas

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Education

Stanford University Stanford, CA

B.S. in Computer Science, Minor in Mathematics *June 2027*

Selected Awards: Regeneron ISEF 1st Place Grand Award (2022), 3rd Place (2023), CIA 1st Place Special Award, USAF 1st Place Special Award; ICOET Most Outstanding Presentation (2025)

Experience

AI Software Engineer Intern June 2025 – Sep. 2025

Salesforce AI Research *Palo Alto, CA*

- Built a modular agent-graph optimization framework for automating multi-agent planning workflows
- Researched symbolic graph optimization methods including evolutionary algorithms and LLM-guided descent
- Designed and implemented graph rewrite tools for subgraph collapsing, node pruning, and operator selection
- Analyzed optimization performance across task types via ablation studies and generalization testing

Student Researcher Jan. 2025 – Present

Stanford Intelligent Systems Laboratory *Stanford, CA*

- Built MILP-based models in Pyomo to optimize satellite ground station placement across mission objectives
- Used TLE data with the Brahe astrodynamics library to generate satellite–station visibility constraints
- Developed Python analysis tools to evaluate data throughput and identify communication coverage gaps

Co-founder and CTO Oct 2021 – Present

Iyarkai LLC *Washington State*

- Founded Iyarkai to develop AI tools for wildlife monitoring and conservation; secured a contract with WSDOT
- Created a morphing pipeline to simulate thermal data from 26K+ labeled COCO-format optical images
- Built a two-stage YOLOv8 pipeline combining synthetic trained detection and real thermal classification
- Achieved 100% precision and 97.65% recall on real-world deployments across I-90 camera traps
- Deployed system across active WSDOT sites; expansion planned for 12 additional highway crossings
- Presented methods and system design at ICOET & TWS Western Section Conference 2025 (abstract: ucdavis.edu)

Applied Science Intern June 2021 – June 2025

UC Davis Road Ecology Center *Davis, CA*

- Developed RADIS: a YOLO-based edge-computing system for real-time wildlife detection and classification
- Trained models on custom-labeled roadside datasets to detect animals in varying highway environments
- Deployed RADIS on NVIDIA Jetson devices in Nevada; achieved 97% detection accuracy and 99% system uptime
- Benchmarked inference latency and power consumption to meet real-time roadside alerting requirements
- Presented findings at ICOET 2023 (abstract: icoet.net/2023)

Projects

Surgical Phase Detection | *PyTorch, ResNet18, Computer Vision, Transformers, Machine Learning* June 2025

- Trained transformer and 3D CNN models to classify phases in laparoscopic surgery using multi-video finetuning
- Matched SOTA accuracy with 6× fewer parameters; enabled real-time inference for surgical assistance systems
- Compared temporal modeling methods (GRU, Transformer) and optimized for parameter efficiency and latency

NBA Player Stats Predictor | *Python, NumPy, Pandas, Scikit-learn, Mathematics, Predictive Models* March 2025

- Developed pipeline for player prop prediction using rolling stats, matchup context, and SVD-based reduction
- Applied SVD to extract latent factors from 25+ features for interpretable multi-stat forecasting
- Built modular system with ingestion, feature engineering, and prediction components for real-time use

Technical Skills

Languages: Python, C++, JavaScript, TypeScript, Bash, HTML/CSS
ML / Data: PyTorch, OpenCV, YOLO, CUDA, NumPy, Pandas, Scikit-learn, SciPy, Matplotlib
Optimization / Modeling: Gurobi, Pyomo, MILP, Hydra, Weights & Biases
Systems / Tools: Git, Docker, FastAPI, React, NVIDIA Jetson, VS Code, LaTeX
Hardware / Design: KiCad, Fusion 360, Autodesk CFD