Hari Sai Harish

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EDUCATION

Purdue University   West Lafayette, IN
B.S. in Computer Science and Data Science, Minor in Economics   *Expected Grad: May 2027*
   – Scholarships & Recognitions: DS Outstanding Freshman of the Year, Dean's List (2x), Semester Honors (2x).
   – Coursework: DSA, Computer Architecture, Discrete Math, Linear Algebra, Calculus, Statistics (GPA: 3.94).

EXPERIENCE

Backend Engineer   Aug 2024 – Present
Concrete Engine: Express.js, MongoDB, GCP, Docker, NAS   *West Lafayette, Indiana*
   – Architecting a fault-tolerant, tick-based pipeline to replicate and sync customer data (including intermediate artifacts) to all active NAS nodes via GCP, ensuring seamless failover across HPC rigs. Hosting a virtualized TrueNAS environment on GCP (using QEMU on KVM), to support remote setup and rigorous testing.
   – Developed a comprehensive observability infrastructure for High-Performance Computing rigs, to monitor real-time system health/performance across 50+ distributed nodes. Reduced incident detection time by over 40%.
   – Created an automated secure workflow for dynamic environment creation, allowing users to clone GitHub repos, by auditing Dockerfiles, building container images, and uploading artifacts to Google Cloud for future HPC tasks.

Software Engineer Intern   Feb 2025 – May 2025
Vertikal X: Nest.js, PostgreSQL, GraphQL, Docker, Python, HuggingFace   *Remote - Austin, Texas*
   – Drove accelerated full-stack development, in direct collaboration with the Co-Founder.
   – Engineered a scalable TypeORM backend, leveraging DTOs and GraphQL resolvers for PostgreSQL integration.
   – Authored a proprietary scoring algorithm to track athlete performance, social presence, and predict future stars.

Software Engineer Intern   Jun 2024 – Jul 2024
Tarnea Technological Solutions Ltd.: OpenCV, Dlib, Flask, NumPy, Deep Learning Models   *Bengaluru, India*
   – Built a real-time engagement tracker that detects and analyzes customer interactions with advertisements.
   – Designed algorithms to track and categorize faces, eyes, and customer demographics with 95% accuracy.

Software Developer Intern   Jun 2023 – Sep 2023
SmartAxiom Inc.: TypeScript, Angular.js, Next.js, MongoDB   *Remote*
   – Developed a live tracker to collect vital data from heat sensors and GPS monitors on shipments.
   – Implemented a parametric filter to display collected data, increasing website traffic by 70%.

PROJECTS

Pathwise | *Next.js, Google Cloud Platform, Vertex, BigQuery, NLP, Firebase*   Aug 2025 – Present
   – Mentoring 4 students as a Project Leader for Google Developers Group @ Purdue.
   – Spearheading development for a web-app using AI-driven insights to personalize and enhance students' college experience by suggesting courses, clubs, events, and research labs, tested and recommended by like-minded seniors.

ShortestRoot | *React.js, Google Maps API, SQLite*   Jan 2024
   – Led creation of a web-based platform to streamline fair and efficient meet-up planning in foreign/busy cities.
   – Devised innovative triangulation algorithms to calculate optimal urban-transit routes based on real-time traffic.
   – Secured 1st place in Oakridge Codefest (India's largest overnight hackathon) - trophy + 30,000 INR cash prize.

RESEARCH EXPERIENCE

ML for Theatrical Prop Navigation and Directionality Decisions   Feb 2025 – Present
Purdue University, under Prof. Rich Dionne, Dean of Theatre   *West Lafayette, IN*
   – Developing state-of-the-art CV models for extracting prop locations and stage layouts from theatrical blueprints.
   – Leveraging YOLOv8 and Hough Transform models to facilitate human, object, and path detection.
   – Implementing reinforcement learning-based navigation for dynamic, sentient movement of autonomous stage props.

SKILLS SUMMARY

Languages: Bash, C/C++, Dart, Java, JavaScript, TypeScript, Python, R, SQL.
Frameworks: (Next, Express, React).js, Flask, REST, Flutter, Docker, Firebase, MongoDB, PostgreSQL, Unity.