

# PRANAV CHANDAR SRIDAR

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## EDUCATION

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### University of Maryland, College Park

2022 - May 2026

*Bachelor of Science, Computer Engineering*

*College Park*

- **GPA:** 3.35
- **Coursework:** Operating Systems (ENEE447), Communication Networks (ENEE426), Embedded Software Design (ENEE408M), Computer Security & Reverse Engineering (ENEE459B), Digital Computer Design, Computer & Network Security, Machine Learning (CMSC422)

## TECHNICAL SKILLS

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- **Programming Languages:** C, Java, Python, C++
- **Backend & Systems:** Linux, Kubernetes, Docker, Ansible, Distributed Systems, CI/CD, Performance Tuning, RESTful APIs, GraphQL, API Integration, Event-driven Architecture, Messaging Systems, Caching Strategies, Git, Agile Methodologies
- **Front-End Development:** React.js, CSS
- **Database Management:** MySQL, Amazon Aurora, MongoDB, relational databases, Search Engines, OpenSearch, PostgreSQL, DynamoDB
- **Cloud:** AWS, AWS Lambda, AWS Step Functions
- **Electrical Engineering:** Digital Design, Embedded, Software Design
- **Hardware Description:** Verilog, SystemVerilog

## EXPERIENCE

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### Hughes Network Systems (an EchoStar Company)

Jun 2025 - Aug 2025

*Hardware Engineering Intern*

- Deployed and containerized distributed 5G software systems using Docker and Kubernetes, establishing CI/CD pipelines with Git
- Configured and debugged high-performance networking components (DPDK, SR-IOV) in Linux environments, applying performance tuning techniques
- Diagnosed synchronization and performance issues across multi node clusters under real-time constraints
- Collaborated with cross-functional engineers to troubleshoot system-level issues across virtualization and software stack components within Agile methodologies

### EIT, UMD

Mar 2025 - Mar 2026

*Software Engineering Developer (Terrapin Works)*

- Contributed to UMD's official makerspace platform serving 25+ labs and campus facilities, integrating GraphQL alongside OpenSearch and collaborating with React.js front-end developers for efficient UI interactions
- Implemented RESTful backend services in Python for authentication, access control, and workflow automation using AWS Step Functions and GitOps-driven CI/CD
- Assisted with backend feature development and debugging within a distributed systems architecture leveraging PostgreSQL and Docker to support scalable lab management workflows

## PROJECTS

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### Dataflow Image Processing Pipeline

Feb 2026

- Implemented a scalable, modular dataflow processing pipeline in C++ using the Welter/LIDE actor framework for hyperspectral and grayscale image analysis, applying event-driven architecture principles to decouple components
- Developed actors for background subtraction, thresholding and histogram computation using FIFO-based dataflow execution
- Leveraged Linux perf tools for performance tuning, optimizing scheduler-driven actor graph execution to maximize throughput in high-volume image processing

### Intelligent Search & Optimization Engine

Oct 2025

- Implemented A\*, MST heuristics, Simulated Annealing, and Genetic Algorithms in C++ using efficient data structures and profiling techniques to ensure high scalability and runtime performance
- Benchmarked algorithmic trade offs across runtime, optimality, and scalability
- Designed and containerized an experimental evaluation framework with Docker, integrating CI/CD pipelines and Git for consistent benchmarking and rapid iteration

### Autonomous Vehicle Localization & Probabilistic Modeling

Dec 2025

- Implemented Particle Filter and Kalman Filter for real-time vehicle localization
- Built Bayesian Network for overtaking and crash probability inference
- Evaluated robustness under Gaussian, Laplace, and Cauchy noise distributions

## CERTIFICATIONS

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- **AWS Certified Cloud Practitioner:** [https://www.credly.com/badges/c8fede92-6629-4bce-b14f-41ead62c8468/public\\_url](https://www.credly.com/badges/c8fede92-6629-4bce-b14f-41ead62c8468/public_url)
- **Applied AI Engineering - Anthropic x CodePath:** Built AI-powered applications using Python and LLMs, including agent-based systems, prompt engineering workflows, retrieval-augmented generation (RAG), and large-scale codebase analysis.