

Darshan P.

Bangalore, Karnataka

Portfolio | Project Halley | MathSE | ✉ drshnp@outlook.com | [GitHub](#) | [HackerRank](#) | [LinkedIn](#)

WORK EXPERIENCE

NumTrade Fintech Labs LLP, Partnership

Full-Stack + Trading Backend (Go + React/Node + Mobile + Cloud)

Dec. 2024 – Apr. 2025

- Engineered real-time trading backend in Go with support for WebSocket streams, order execution, and cron-based jobs. Integrated PostgreSQL, cloud functions, and REST APIs to power the trading web (React) & mobile apps stack.

Wolfram Research, Inc., Remote

Freelance Backend Developer (Python + Rust + \LaTeX)

Aug. 2024 – Nov. 2024

- Built backend data modules integrating Rust-accelerated logic into Python pipelines for scientific computing workloads. Collaborated with researchers to expose services via internal APIs, optimizing symbolic + numeric evaluations.

Flipkart Internet Pvt. Ltd., Bangalore

SDE-I (GCP/Azure + Django + Linux)

Apr. 2024 – Jul. 2024

- Built backend infrastructure services in Python for provisioning Linux systems and internal developer tools on AWS. Designed APIs for managing cloud deployment states with audit logging, retries, and monitoring hooks. Integrated low-level automation in Rust for performance-intensive modules.

ProHuman Technology Pvt. Ltd., Bangalore, India

Backend Developer for Flipkart (Golang + Python + Cloud + Data Pipelines)

Mar. 2024 – Apr. 2024

- Developed Go-based microservices to automate cloud infrastructure workflows and backend API endpoints for internal operations. Leveraged GCP/Azure SDKs, async task queues, and containerized services to optimize deployment automation and data pipelines.

Bayesrock Corporation - Project Halley, Partnership

Research Engineer (HFT Systems + Large-Scale Data Analytics + Redis)

July. 2023 – May. 2024

- Worked on high-frequency trading system design and analytics infrastructure under Bayesian Corp, focused on large-scale mathematical simulations and market modeling. Involved in building scalable data ingestion pipelines and supporting analytics modules for probabilistic forecasting before project realignment under Bayesrock Corporation.

Tata Consultancy Services Limited (TCS), Pune, India

System Developer for Ernst Young (Go + Python + Rust + PostgreSQL)

Jun. 2021 – May. 2023

- Contributed to internal tools and backend utilities for a Big-4 client, using Go and Python to automate reporting and compliance workflows. Developed CLI tools integrated with PostgreSQL for time-series parsing, audit log validation, and automated compliance reporting.

GeoGebra GmbH, Remote

Software Engineering Intern (JavaScript + Java + PHP)

Jun. 2020 – Dec. 2020

- Assisted in the development and maintenance of backend features for GeoGebra's interactive mathematics platform. Contributed to Java and JavaScript modules powering dynamic geometry and algebra tools. Supported integration workflows for modular content delivery and participated in internal feature testing and tooling improvements.

SKILLS & OTHERS

Programming Languages: Assembly (x64 Architecture), BASIC, Bash, C/C++, Fortran, Go, Haskell, Java, JavaScript, Julia, \LaTeX , Mathematica, Markdown, Python, R, Rust, Solidity, OCaml

Web Development: Apache, Bootstrap, CSS, Django, HTML5, Nginx Server, PHP, Tailwind

Data Analysis & Machine Learning: Matplotlib, NumPy, PyTorch, pandas, scikit-learn, SciPy, SQL, SymPy, TensorFlow

Version Control & Cloud: Git, AWS, GCP, Microsoft Azure, Render (Backend), Vercel (Frontend)

Operating Systems: Blockchain, CLI, GNU/Linux, Unix-like systems

Mathematics: Analytical Geometry, Calculus, Cryptography, Linear Algebra, Macroeconomics & Microeconomics, Number Theory, Special Functions

PROJECTS

PyPI Projects,

Topic: Collection of various projects developed and available on PyPI

(Math + Cryptography)

- Explore my PyPI profile for projects including [Dropit](#), [Authf](#), [EnigmaCifra](#), and [Xpost](#), among others.

Web Development Projects,

Topic: Built websites for [Bayesrock](#), [Bayesian Corp.](#), & a 2025 Maharashtra Assembly candidate campaign. (Cloud | Linux | DB | PHP)

- Also built a personal [website](#) exploring research, critical theory, and experimental projects across disciplines.

Blockchain & Smart Contracts,

Topic: [Authorship claim](#), Betting contracts, & MLM-based projects.

(Solidity + JS + Haskell)

- Inspired by Bitcoin's whitepaper, but exploring alternatives due to blockchain's practical challenges.

Halley's Comet Orbital Evolution,

Topic: Analyzed comet path and gravitational effects projecthalley.org

(Research Initiative + ComputerInfra)

- Analyzed the trajectory and gravitational dynamics of Halley's Comet over successive orbits.

RESEARCH & PUBLICATIONS

From the Summation of the Quotient Function to the Partition of Integers

Finding integer partitions using quotient function and recursive summation.

An Alternative Proof of the Fundamental Theorem of Algebra

Alternative proof focused using irreducible polynomials of degree 2.

Mathematical Framework for Skill-Based Number Betting and Payout Liabilities

Developed a betting model using option pricing and time-decay to minimize aggregate wagers.

Architecturing the Consent for Democracy

Draws from Bernays’ Propaganda and Chomsky’s Media Control to study public opinion formation.

EDUCATION

Govt. College of Engineering, Jalgaon, Maharashtra, India

Bachelors of Technology in Mechanical Engineering (CGPA: 8.35 on a scale of 10)

Aug. 2017 – Apr. 2021