Shravan Goswami

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Education

Uka Tarsadia University (UTU), Bardoli, Gujarat, India — 2022 – Expected May 2026
Bachelor of Technology in Computer Science and Engineering
Cumulative CGPA: 8.22/10.0, Semester SGPA: 9.30/10.0 (7th Semester)

Research Experience

Research Assistant (Remote), Machine Learning Group, University of Cambridge — May 2024 – Present
Mentor: Prof. Hong Ge

- Implemented new visualization tools in `MCMCChains.jl`, including Violin, Energy, and Prior/Posterior Predictive Check (PPC) plots (contributions).
- Maintained the official websites for the Turing Ecosystem and MLG, University of Cambridge.
- Automated publication site generation from a single BibTeX source using Quarto listings and Python.
- Built Turing Actions (`DocsDocumenter` and `DocsNav`) for automatic `Documenter.jl` builds and shared navigation injection.
- Contributed to benchmarking improvements in `DynamicPPL.jl` (PR #346) for inference performance evaluation.
- Contributed across `DoodleBUGS`, `JuliaBUGS.jl`, `MCMCChains.jl`, and `DynamicPPL.jl`, with regular docs and CI/CD maintenance.

Research Assistant (Remote), Vectorly LLC — Aug 2024 – Nov 2024

- Worked on Markov Chain Monte Carlo (MCMC) research tasks for probabilistic modeling use cases.
- Built experiment scripts for sampling, convergence checks, and chain diagnostics.
- Prepared reproducible research notes and implementation summaries for internal review.

Software Development Experience

Google Summer of Code Contributor, The Julia Language — May 2025 – Sep 2025
Project: DoodleBUGS

- Built a full-stack graphical interface for the BUGS language to visually create, edit, and analyze probabilistic models.
- Added DAG-based model design, model export (PNG/SVG/JSON), and backend hooks for model execution.

Cyber Security Intern, National Technical Research Organisation (NTRO) — Apr 2025 – Nov 2025

- Developed security automation scripts using C# and PowerShell to enforce system hardening policies in a confidential onsite environment.
- Supported policy rollout and repeatable hardening workflows for Windows-based systems.

Open Source Contributions & Maintenance

Project	Role	Major Contributions
`turinglang.github.io`	Core Contributor & Maintainer	Developed the official Turing.jl website and now maintain the site and docs setup.
`TuringLang/actions`	Core Contributor & Maintainer	Built `DocsDocumenter` and `DocsNav`, and now maintain these shared `Documenter.jl` build/deploy workflows.
`html-link-action`	Creator & Maintainer	Built a pure Node.js GitHub composite action for static HTML link modification and validation; published on GitHub Marketplace as HTML Link Processor.
`SecurityAdvisories.jl`	Core Contributor (External)	Developed the automated Julia Security Advisories website using Franklin.jl as a third-party contributor. Live.
`MCMCChains.jl`	Core Contributor	Added Violin, Energy, and PPC visualization support; active issue fixes and maintenance work.
`JuliaBUGS.jl (DoodleBUGS)`	Founding Developer	Developed DoodleBUGS from scratch and continue feature development for BUGS workflows.

Writing Experience

Technical Content Writer (Remote), GeeksforGeeks — Jan 2024 – Jan 2025

- Authored 23+ technical articles covering topics from algorithms to framework usage (contributions page).

Independent Technical Writing, Personal Blog 2025 – Present

- Regularly write technical posts and notes on my personal blog: shravangoswami.com/blog.

Research Interests

Research interests include Probabilistic Machine Learning, Probabilistic Programming Languages (PPLs), Bayesian deep learning, and practical Bayesian inference tools for scientific computing.

Preprints & Manuscripts

[1] **Shravanpuri Goswami**, Santosh Saha, and Happy. **Deepfake Identification Strategies for Secure Cyberspace Engagement**. Published in IEEE Xplore - ISCS 2025 Conference (First author). 2025. DOI: 10.1109/ISCS69371.2025.11385930.

[2] **Shravanpuri Goswami**. **Google Summer of Code 2025 Report: DoodleBUGS**. Published at TuringLang News: Read Article. Sept. 2025.

Peer Review Experience

[3] Umar Islambekov and Aleksei Luchinsky. **TDAvec: Computing Vector Summaries of Persistence Diagrams for TDA**. Review. 10.21105/joss.08532 | See Review. 2025.

[4] Xue Quan and Antoine Levitt. **MatrixFuns.jl: A Julia package for evaluating matrix functions**. Review. 10.21105/joss.08396 | See Review. 2025.

[5] K. Tsuyuzaki. **OnlinePCA.jl: A Julia Package for Out-of-core and Sparse Principal Component Analysis**. Review. 11(117), 9343. 10.21105/joss.09343. 2026.

Talks & Presentations

[6] **Shravanpuri Goswami**. **DoodleBUGS: A Graphical Interface for BUGS Models in Julia**. Presented at the Research Department, AMTICS, Uka Tarsadia University. July 2025.

Technical Projects

SecureVault (Android Application) Play Store

Android app for secure photo, video, and notes storage with disguise app modes (Clock, Calculator, MoodSpace, Notes).
Flutter, AES-256, Android

PULSE – Smart City Emergency Traffic Management GitHub

Built a real-time green corridor system for emergency vehicles using live GPS, traffic-aware shortest-path routing, and signal control. Delivered 2 mobile apps (PULSE, PULSE-CC) and 3 web apps (Admin Website, PULSE-AID-WEB, and a FASTAPI dashboard).
FastAPI, Mobile & Web Apps, GPS, Dijkstra, A*, Bellman-Ford, Floyd-Warshall, Directed SSSP (arXiv:2504.17033)

DoodleBUGS: a Browser-Based Tool for Drawing Probabilistic Graphical Models GitHub | Try it

Browser-based tool to draw probabilistic graphical models for the **BUGS** language, with code generation from DAGs and model export (PNG/SVG/JSON). See project report.
Vue.js, Vite, TypeScript, Julia

MLG Cambridge Website & Publication System GitHub | Site

Developed the official website and an automated BibTeX-driven publication pipeline for MLG, University of Cambridge. Open-sourced a reusable template: quarto-academic.
Python, Quarto, EJS, CSS, Shell Scripting

Turing.jl Website and Turing Actions GitHub | Live

Maintainer of the official Turing.jl website; set up docs and built reusable GitHub Actions (DocsDocumenter, DocsNav) for Documenter.jl build and global navigation.
Quarto, Documenter.jl, HTML, CSS, JavaScript, GitHub Actions

Group Policy Object Manager for Windows - Smart India Hackathon 2024 GitHub

Windows application to generate and manage custom Group Policy Objects (GPOs) aligned with CIS security benchmarks; finalist project at Smart India Hackathon 2024.
.NET, C#, WPF

Portfolio Website & Blog - shravangoswami.com GitHub | See here

Astro-based portfolio and blog featuring technical writing, personal notes, and a central place for my resume and projects.
Astro, TypeScript, Python, Tailwind CSS, Astro-Paper template with many customizations

Social Media Feed GitHub | Demo

A Django-based web app with user authentication, posts, likes, comments, and user profiles.
Python, Django, HTML, Bootstrap

See all of my projects: shravangoswami.com/projects

Awards & Achievements

- **Google Summer of Code (2025):** Selected to contribute to The Julia Language open-source ecosystem.
- **Smart India Hackathon (2024) Finalist:** Led a team to the final round with a Windows security tooling project.
- **UTU Shark Tank Winner (2023, 2025):** Won first place twice at an inter-university startup pitch competition.
- **Codeforces Max Rating: 1247 (Pupil):** Achieved Pupil rating in competitive programming contests.
- **Mathematics Olympiad (State Level, Grade 9):** Gold Medal.

Technical Skills

- **Languages:** C++, Python, Julia, JavaScript, TypeScript, HTML, CSS, Shell/Bash
- **Frameworks & Libraries:** Turing.jl, MCMCChains.jl, DynamicPPL.jl, Django, Quarto, Vue.js, Flutter, Documenter.jl
- **Developer Tools:** Git, GitHub Actions, VS Code, Docker, PowerShell

Extra-Curricular Interests

- **Philosophy:** Nietzschean and Platonic Philosophy
- **Cinema:** Films by Fincher, Villeneuve, Tarantino, Scorsese, and Spielberg
- **Manga / Literature:** One Piece by Eiichiro Oda, Greek and Vedic History

Thank You