

Ayush Singh

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SUMMARY

Software engineer focused on Linux and upstream open source, with hands-on maintainer experience in The Linux Foundation's OpenPrinting ecosystem. Builds Python tooling, debugs Linux desktop/system software, and collaborates with upstream maintainers across distributed codebases.

OPEN SOURCE ENGINEERING — THE LINUX FOUNDATION / OPENPRINTING

Maintainer & Open Source Engineer

Jul 2025 – Present

github.com/OpenPrinting/system-config-printer · [go-mfp](#) · [foomatic-db](#) · [legacy-drivers](#)

- **Printer discovery & device handling:** delayed device presentation until DNS-SD discovery completes; corrected IPP-over-USB classification so locally connected printers are no longer misreported as network devices; added URI normalization and filtering of already-configured printers, backed by IPv4/IPv6 and LAN regression tests.
- **Driver selection / GUI / PPD:** traced driver-selection and PPD-loading paths to isolate GUI freezes caused by synchronous PPD catalog loading; implemented extraction and display of human-readable driver names from PPD metadata; investigated PackageKit/Jockey integration and its impact on the GTK UI.
- **Installation-freeze / concurrency:** reworked installation and driver-loading paths to keep the GTK main loop unblocked using GLib idle callbacks and worker-thread execution; worked directly with upstream maintainer Alexander Pevzner to reproduce and debug driver-installation freezes.
- **go-mfp & Foomatic:** fixed UUID-merging and nil-backend failure paths in printer-discovery logic with regression coverage across Go and Python; maintained legacy driver metadata, corrected broken upstream references in the Foomatic XML database, and built lookup tooling for foomatic-lookup-site.

SELECTED PROJECTS

Printer Support Resolver (PSR) | *Python, SQLite, CUPS/PPD*

github.com/SinghCod3r/printer-support-resolver

- Linux-native Python tool for fast printer support and driver resolution; parses local PPD files into a SQLite index and resolves support via IEEE 1284 Device IDs, matching manufacturer, model, and command capabilities.
- Implements driver ranking with system-config-printer-style preference semantics and driverless/IPP Everywhere detection; separates support resolution from provisioning across a five-stage pipeline (Index, Resolution, Support Gap Analysis, Ranking, Provisioning).
- Covered by unit and integration tests with benchmarking; reduces reliance on synchronous PPD loading and legacy PackageKit/Jockey coupling.

Ezy — Python Scripting Language & Automation Runtime | *Python*

singhcod3r.github.io/ezy

- Designed and implemented a deterministic scripting language and interpreter in Python, with an indentation-aware lexer, a recursive-descent parser, an AST, and a tree-walking interpreter with lexical environments and runtime values.
- Built a CLI with run, check, and repl workflows, and added files, processes, HTTP, and JSON as first-class language capabilities; validated with automated pytest coverage across the lexer, parser, interpreter, standard library, and CLI.

PROFESSIONAL EXPERIENCE

Trainee Technical Consultant

Feb 2026 – May 2026

Acciom Consulting

Noida, India

- Developed, integrated, and validated 19 REST APIs supporting application and data migration workflows for Microsoft Dynamics 365 Business Central.
- Built and tested Business Central customizations for payroll/employee-management workflows and React Native CLI features for the Floor & Furnishing product; performed root-cause analysis across API, backend, and workflow defects.

SELECTED UPSTREAM CONTRIBUTIONS

WP Rig: 3 merged PRs — mobile navigation/submenu (#890), theme.json integration (#891), accessibility fix (#892) – v3.0

Medic / CHT (cht-core, cht-conf): contributed fixes and tooling improvements to the CHT open-source ecosystem – v5.0

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, Java, SQL

Python: CLI development, interpreters, automation, API integration, XML/JSON, SQLite, debugging

Linux & Systems: GTK, GLib, D-Bus, CUPS, PPDs, DNS-SD, IPP, printer discovery, system integration

Open Source: Git, GitHub, pull requests, code review, upstream collaboration, issue triage, regression testing

Backend & APIs: REST APIs, Node.js, Express.js, Next.js, API testing

Testing: pytest, unit/integration/regression testing, debugging, root-cause analysis

DevOps: Docker, GitHub Actions, AWS, Terraform

EDUCATION

Shri Ramswaroop Memorial College of Engineering and Management

Lucknow, India

B.Tech, Computer Science & Engineering — CGPA: 8.62/10

ACHIEVEMENTS & CERTIFICATIONS

Speaker — OOSC 4.0, IIIT Allahabad — “AI Overload: How Careless AI Usage Is Quietly Killing PR Quality” (Aug 2026)

Hacktoberfest 2025 — Super Contributor | **LFC102** — The Linux Foundation