

Shashwat Agrawal

+91 9420153261 | shashwatagrawal473@gmail.com | linkedin.com/in/theshashwatagrawal | github.com/ShashwatAgrawal20

EDUCATION

Vishwakarma Institute of Information Technology (VIIT)

B.Tech in Information Technology, CGPA: 8.36

Pune, Maharashtra

Sep 2024 – July 2027

SiddhiVinayak Technical Campus

Diploma in Computer Science and Engineering, Percentage: 89.83%

Khamgaon, Maharashtra

Sep 2021 – July 2024

EXPERIENCE

Open Source Contribution

Pandas

- Refactored `format_is_iso` by replacing an explicit loop-based ISO datetime check with a compiled regex, reducing Python iteration overhead and improving performance. [PR]
- Fixed incorrect ISO week 53 handling in `to_datetime`, preventing silent rollover for non-existent ISO weeks, ensuring standards-compliant behavior for ISO calendar years with only 52 weeks, and adding regression tests [PR]
- Aligned datetime parsing documentation with the PEP-4 deprecation of `infer_datetime_format`, reflecting updated behavior and preventing user reliance on deprecated APIs. [PR]

Collaborative Project

Text Content Summarizer

Python, Flask

- Led the development of a flexible Content Summarization API, utilizing Flask, the sumy library, and mediawikiapi to enable URL, text, and keyword-based summarization with the Latent Semantic Analysis(LSA).
- Leveraged mediawikiapi to retrieve Wikipedia content based on user-provided keywords.
- Reduced content summarization time by 40% through the utilization of the LSA and efficient API design.

PROJECTS

tec.h | C/C++

- Built a header-only, zero-dependency unit testing framework for C/C++ using macro meta-programming for automatic test discovery, registration, and rich assertions.
- Added test suites, fixtures (setup/teardown), expected failures (XFAIL), skipping, and advanced filtering (positive/negative, file-level).
- Implemented rich assertions (equality, floats, strings, comparisons), colored output, and C++ exception testing.
- Actively maintaining with recent additions like exclusion filters and CI improvements.

Byte Machine | Rust

- Designed and implemented an 8-bit virtual machine with a custom ISA and 16-bit address space, complete with CPU emulation and memory management system.
- Engineered a custom two pass assembler that translates assembly code to bytecode, featuring support for label resolution, variables, direct memory addressing, and basic control flow.
- Implemented key components such as a stack, registers, and memory management, mimicking real-world processor functionality.
- Designed the VM and assembler for performance and extensibility, enabling easy addition of new opcodes and architectural features.

HTTP Server | Rust, Tokio, Multi-threading

- Developed a high-performance multi-threaded and asynchronous HTTP server leveraging Tokio for concurrency.
- Achieved a 100% success rate handling 100,000 requests at 50 concurrent requests/sec.
- Optimized response times ranging from 400µs to 32.8ms, with an average of 5.9ms and peak throughput of 8,423 requests/sec.

TECHNICAL SKILLS

Languages: C, Rust, Python, JavaScript, SQL (Postgres)

Frameworks: Flask, Django, Node.js

Developer Tools: Git, Docker, Podman, NeoVim, Arch Linux

Libraries: Pandas, Matplotlib, Numpy, Tokio, Axum