



# Xianting Lu

Programmer, write blog sometimes



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[\[CV\]](#)

## About Me

Focusing on LLM/GPT applications with data analysis, enterprise search, highly stable/parallel/distributed server development, and event-driven asynchronous architecture with C++/Rust.

According to enterprise Github, I have contributed 250k+ LOC (C++/NodeJs/Python/Rust) and fixed 500+ defects.

Technique Book **Effective C/C++ Debugging** and two series: [Rust Series: The Model of Programming](#), [C++ Series](#)

Programming Languages: C++/Rust/Java/, Python/Typescript/Javascript, etc.

Tools:

Lucene/ElasticSearch/MonggoDB/PostgreSQL/Kafka/Kubernetes/Container/gdb/CoreAnalyzer/middleware etc. Langchain/Embedding/SQL/Parser/C++/Rust/Java/Python/Typescript/Javascript etc.

## Experiences

- [2023 Feb – Now] Large language models empowering data analysis, ChatGPT prompting, GPT models.
  - E3 Winner (8/3000+) and Employee of the Month (April 2023): Recognized for outstanding performance and exceptional contributions to the company.
  - Successfully led the integrated Langchain with the MSTR dashboard model, leading to the creation of our first chatbot demo and delivered MicroStrategy advancement in AI with Auto Answer.
  - Designed and Implemented the MicroStrategy Auto Answer. Iterated MicroStrategy Auto Answer with major improvements like text2sql2viz, and self-refinement GPT flow which boost the accuracy 8%.
  - Seamlessly integrated Langchain with the MSTR dossier model, marking the creation of our inaugural chatbot demo.
  - Skillfully navigated through numerous challenges such as the CodeAI tool, memory loss issues, fragile prompts, and handling multiple responses to single inquiries.
  - Conceptualized and executed the AI API key provider object model, privilege, and feature flag for FFSQL+AI(F38939) in Q2 2023. Indispensable to the release of MSTR's maiden AI feature.
  - AI Assistant Development:
    - Championed the design and rollout of various AI assistant components, like the output parser, MSTR chat agent, and Multiple Action tools.
    - Played a key role in the team's rapid understanding and use of the codebase and Langchain for AI assistant creation.
  - Machine Learning Package:
    - Spearheaded the development of the MSTR machine learning package titled "mstrai", focusing on crafting and packaging the Keydriver Python algorithm for F39080.
    - Identified and rectified a significant performance bottleneck, slashing response times from 40 seconds to a mere second by optimizing package loading.
  - AI Service Design and Transformation:



- Achieved a commendable shift from Python to JS for the Q3 development milestone
- Navigating through technical hurdles like memory loss issues and fragile prompts in AI chatbot integration. Addressing and resolving pivotal challenges in AI services, such as correcting data interpretation errors and vulnerabilities in data summarization.
- Established comprehensive unit test setup for the AI Service, notably increasing the test coverage for the SQL parser from 1% to 80%. Several defects (DE281521, DE281523, DE281525, DE281763, DE281713) were discovered by the framework indicating the effectiveness of the Unit Test Framework. Also paved the way for further improvement of the test coverage and important refactors of the AI Service.
- [2021 July – 2023 Mar] MicroStrategy China Technology Center, Senior Engineer, C++ infrastructure, +Rust, +Python, etc.
  - Design and implement the ChatABA Service(One comment running integration test) which dispatches tests into machine cluster by one comment, and is adopted by more than 65 engineers in their daily development saving thousands of engineering hours.
  - Lead the Time zone-aware data analysis object models (serialize/deserialize infrastructure) to bring the capacity customers requested for a long time into the MicroStrategy platform.
  - Implement and patent the Systems and Methods for Server Crash Prevention [3rd Author, in-process] to eliminate the hard-to-reproduce server crashes.
  - Design and implement the async infrastructure for MicroStrategy package manipulations.
  - Company Wide Used Tool/Service (open sourced): [automatic task service](#)和公司Python多语言方便添加工具。
- [2019 Feb – 2021 July] MicroStrategy Head Quarter, Virginia Tysons, Engineer, +NodeJs, +Kubernetes, etc.
  - Core engineer of the next generation global search microservice with Elastic Search, research Kafka/Rabbit for indexing, design and implement the modules: query parser, search autocompletion, i18n support, user mention, etc.
  - Containerized MicroStrategy legacy integration tests with K8S, and built the server CAT (Containerized ABA Test Manager) with NodeJS to provide consistent testing results, quick deployment (minutes vs hours), high utilization rate, resource saving, etc.
  - Led and implemented the memory governing component for highly stable services(Patented, 1st author) and refined the high parallel Job infrastructure to provide job memory governing and throttling protection functionalities to prevent server crashing from malicious or high-volume loads.
  - Led and implemented the tool to help the elite customer Inditex upgrade to MicroStrategy's latest products. The tool is integrated into products to serve more customers.
- [2017 May – 2019 Feb] MicroStrategy China Technology Center, Engineer, Data model serialize infrastructure, Java Lucene, etc
  - MicroStrategy next-generation repository service with MongoDB research from relation store to document store.
  - MicroStrategy Metadata management and several key components maintenance like Drilling Data and Security.
  - MicroStrategy Search Engine (Lucene as core) enhancements and maintenance.
  - Server crash analysis like multithread issues, and memory corruption(double free, use after free, etc.).
  - C++ memory detections and summarized 10 memory patterns and educated the whole company's engineers.

## Education

- **Southeast University**  
Sept 2014 – 2017, Information and Communication Engineering
- **Tianjin University**  
Sept 2010 – 2014, Communication Engineering



# Open Source Projects

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[→ Full list](#)

## [Rabot](#)

An intelligence robot handles all the duplicates, and tedious work for me, like recording time sheets, triggering integration tests, etc. With it, I can focus on my work and be freed from unnecessary interruptions.

## [Core Analyzer](#) Core maintainer

A proven powerful tool to debug memory issues. By parsing the memory image of a process's core dump file or its live address space, the core analyzer is able to scan the target's heap data for memory corruption, search the whole address space for data object's references, or analyze memory patterns. It is thorough, labor-free, and insightful.

## [Melt Subtitles](#)

Translating unknown words in video subtitles. With it, you can learn English while watching movies/TV series.

## [Github Webhook Gateway](#)

A microservice in Rust to consume the GitHub Webhook events. Deployable inside Kubernetes and memory footprint 10~M.

# Patents & Certificates

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[Systems and methods for job-level memory governing](#) [1st Author]

(Systems and Methods for Server Crash Prevention)

[<https://patents.google.com/patent/US11789838B2/en?q=>

(Systems+and+Methods+for+Server+Crash+Prevention)&inventor=xianting+lu]

[Certified Kubernetes Application Developer \(CKAD\)](#)

# My Top Tech Blogs

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- [\[Effective C/C++ Debugging\]](#) 2nd Author ISBN: 9787302649717
- [How to debug effectively with GDB](#)
- [Rust Series: The Model of Programming](#)
- [what is move? Understanding C++ Value categories, move in Rust](#)
- [What is Coroutine](#)
- [Skills of Debug core dump?](#)
- [Debug Crash Series](#)

