



The Achilles Heel of Your AI:

Exposing LLM Security Flaws



Sensitive Information Disclosure

Sensitive data, either within the LLM or prompts, can expose users to unauthorized data access, intellectual property theft, privacy violations, and security breaches.

Mitigation:

Data sanitization, strict usage policies, and limiting the data returned by the LLM can help minimize these risks.

When developing our LLM-Orchestrator Open Source Framework, we also thought about this challenge and introduced a feature that allows it to handle sensitive information without LLM's involvement, mitigating the risks of data exposure.

Training Data Poisoning

Malicious manipulation of training data can introduce vulnerabilities, biases, and misleading outputs in LLMs.

Mitigation:

Verify data sources, sandbox access, and use dedicated LLMs for bias detection.



Insecure Output Handling

If LLM outputs are used directly without proper checks, this can expose backend systems to common web-based vulnerabilities, like XSS, SSRF, agent hijacking attacks, etc.

Mitigation:

Treated outputs with suspicion. Implement sanitization and encoding (where applicable) to protect from attacks.

Prompt Injections

Attackers can inject malicious instructions into prompts using techniques like Unicode invisible characters (ASCII Smuggling) or manipulating text within images (multimodal injection). These instructions can bypass traditional security checks and manipulate LLM outputs.

Mitigation:

Limit access, enforce separation, define trust boundaries, and implement human oversight for high-risk actions. Also, use secondary prompts to remind the LLM of its expected behavior.



AI is a great tool! It can crunch data, answer questions, translate languages, and much more. But, like with any powerful tool, there can be risks. Depending on what you use it for, AI could accidentally expose sensitive data, give bad advice, or create biased information.

The key is to **be aware of the risks for your specific project**. If you're building a chatbot, for example, you'll want to make sure it **keeps private information safe and doesn't give out misleading answers**. The good news is that the field of AI is constantly getting better, and many of today's challenges are being actively addressed. Of course, new technology brings new challenges, but that's the nature of progress. We'll keep finding solutions as we go!



Oleksandr Chybiskov

Penetration Tester



To prevent exposing sensitive information to the LLM and its creators, **consider masking it**. This way, the AI acknowledges the information's existence but lacks direct access. Remember **the principle of least privilege**: don't trust anyone implicitly and limit access to sensitive data.

Additionally, LLMs can sometimes generate inaccurate or inappropriate outputs. To minimize this risk, **be mindful of potential hallucinations and unexpected behavior**. These are general LLM security best practices. Specific projects will require additional measures tailored to unique challenges.



Sviatoslav Safronov

Application Security Engineer in Security



What are your biggest LLM security concerns?

Let's discuss how MOCG can help you navigate LLM security challenges in your next project.



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ABOUT

MOCG

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Our Points of Contact

Wondering how to bring your ideas to life?

Contact us today for a free consultation and let's discuss your specific needs.



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We're helping businesses redefine and elevate customer experiences with AI

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