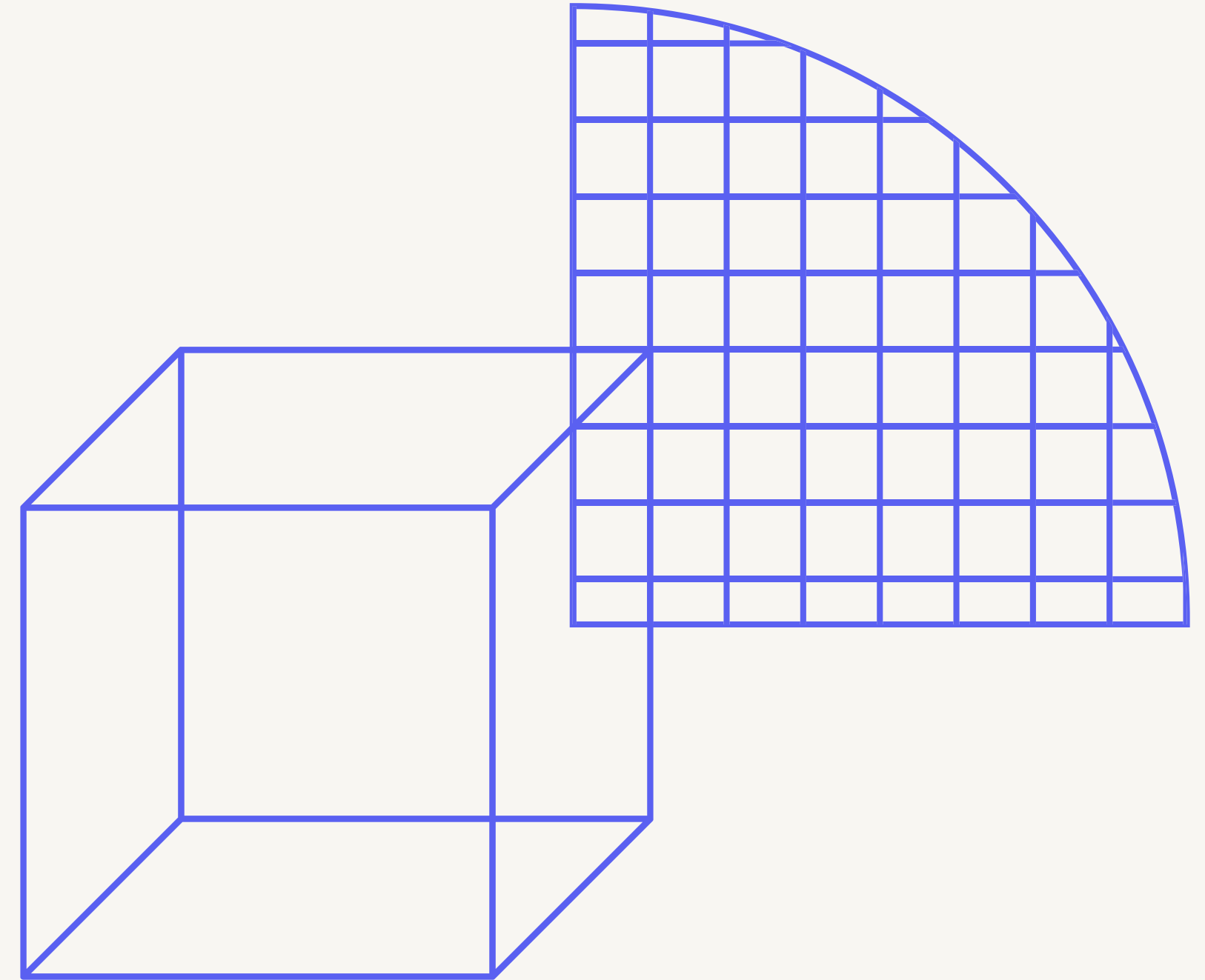


JAN, 2024

# AI AS A CATALYST

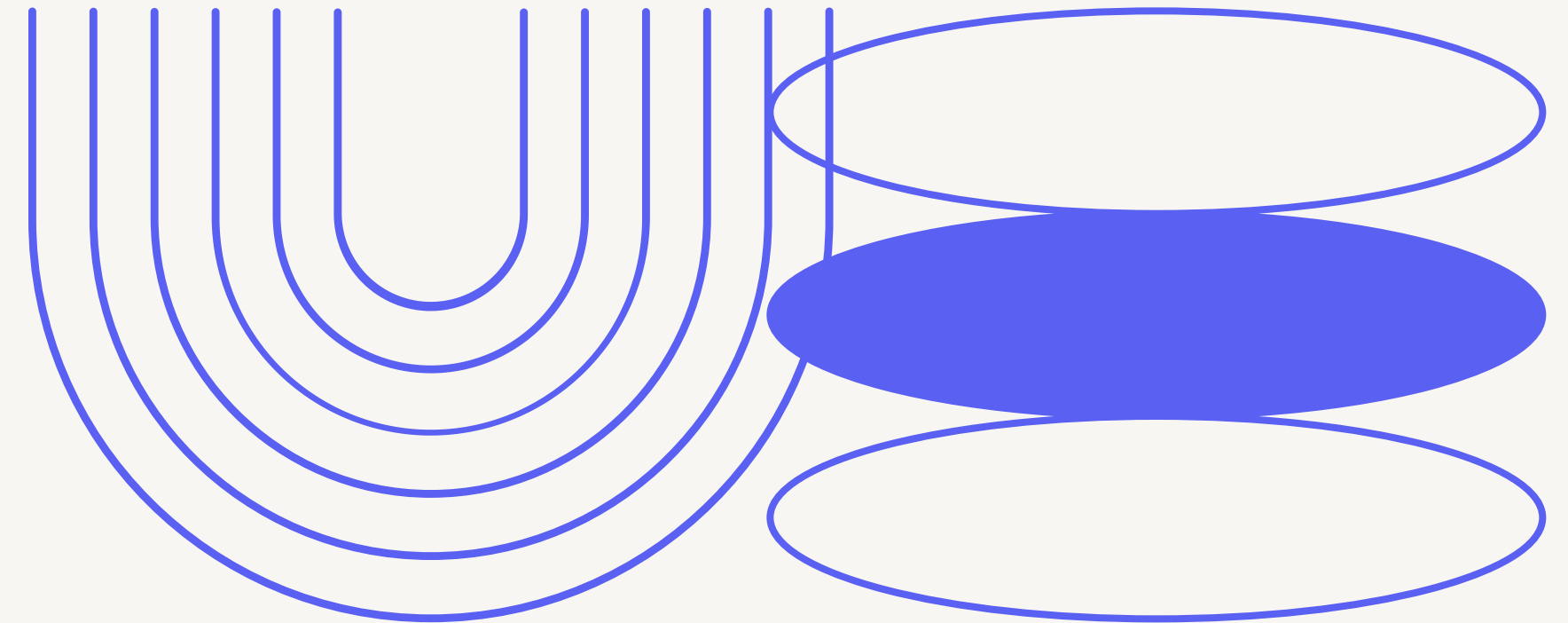
Redefining Resource Management in DevOps



**SAURAV PANDA**

Founder and CEO  
Cloud Code AI, Inc.

# Today's Agenda



## WHAT WE'LL LEARN:

- Introduction to DevOps
- Evolution of DevOps
- AI and IaC
- Automated Optimization
- Enhancing Security with AI
- Error Detection and Self-Healing
- Conclusion

## ABOUT ME

I'm Saurav, Founder and CEO of Cloud Code AI, Inc.



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Cloud Code AI is building a AI-enabled DevOps platform, which automates resource management

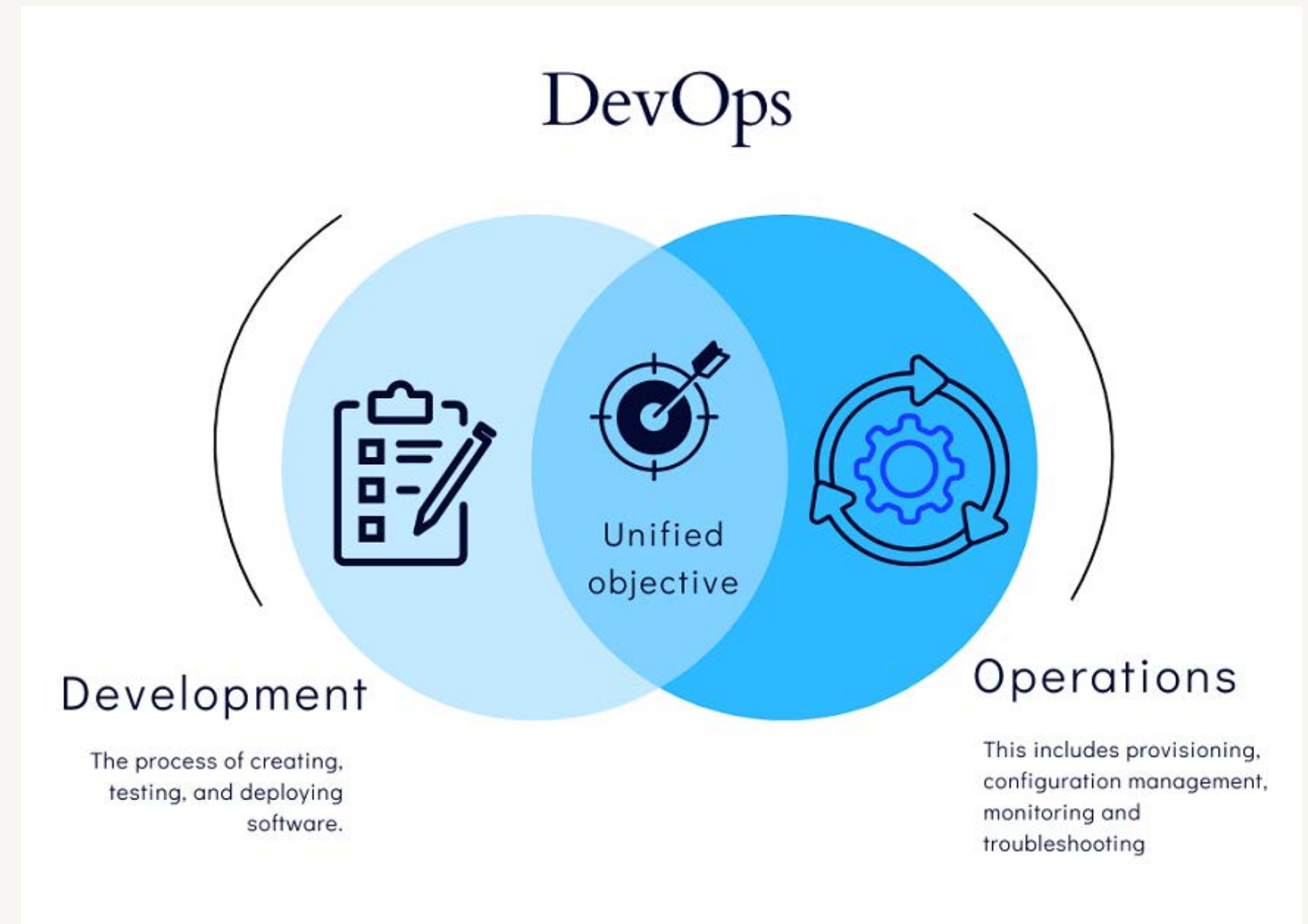
 <https://cloudcode.ai>

 [https://twitter.com/saurav\\_g\\_panda](https://twitter.com/saurav_g_panda)

 <https://www.linkedin.com/in/pandasaurav/>

# DevOps

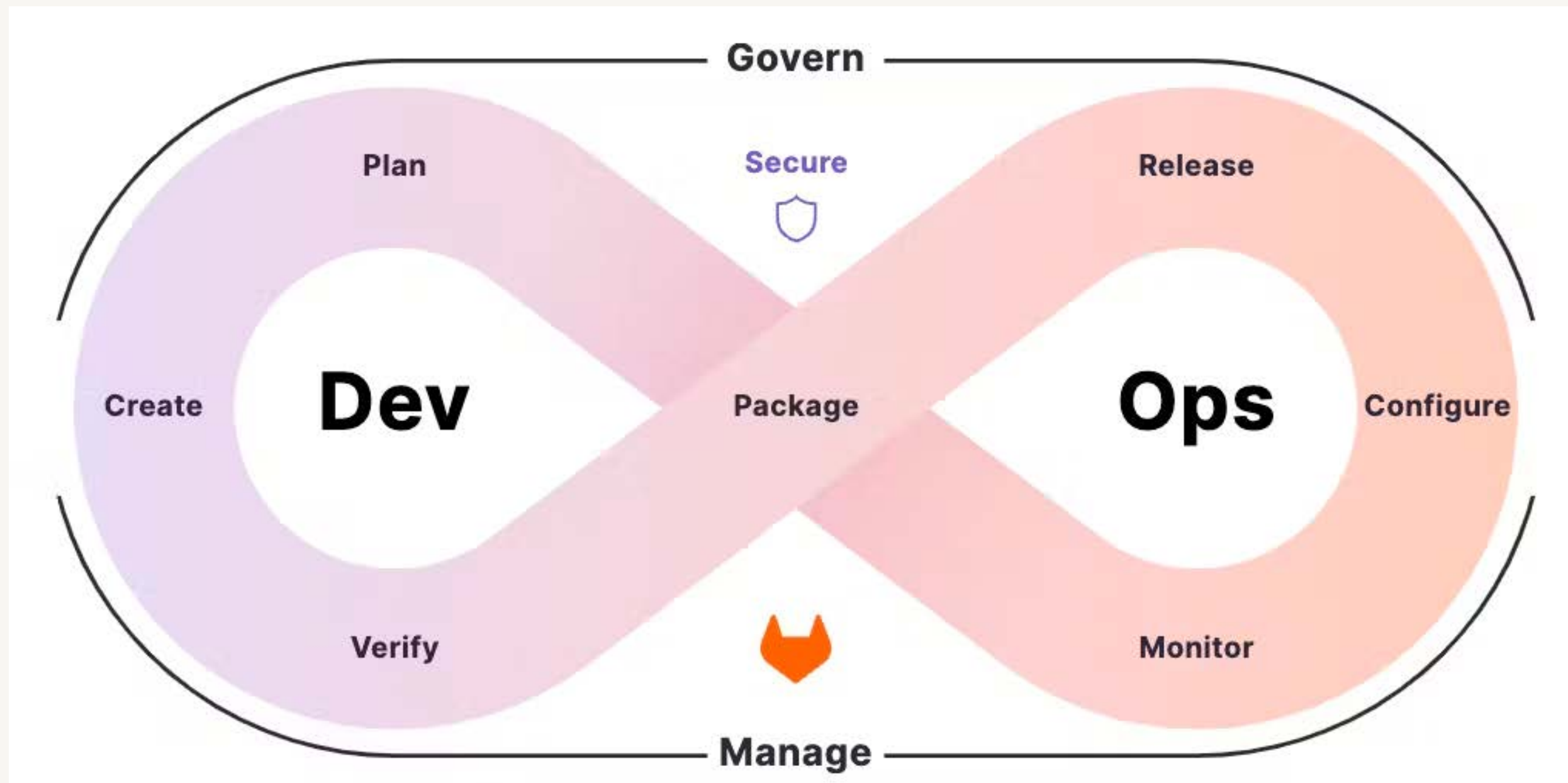
DevOps combines development (Dev) and IT operations (Ops) for better collaboration, communication, and integration between software development and IT operations teams.



SOURCE:

[https://www.manageengine.com/products/applications\\_manager/tech-topics/what-is-devops.html](https://www.manageengine.com/products/applications_manager/tech-topics/what-is-devops.html)

# DevOps Pipeline



SOURCE:

<https://about.gitlab.com/topics/devops/>

# Evolution of DevOps

**2007**

concept of DevOps emerged as a way to bridge the gap between software development and IT operations

**2015**

DevOps was incorporated into the Scaled Agile Framework (SAFe), gaining more traction in the enterprise arena

**2019**

Enterprises began embedding more IT functions, such as security, privacy, policy, and data, into their DevOps culture and processes

**2010**

The term "DevOps" gained traction, with lively debates on Twitter using the hashtag #DevOps.

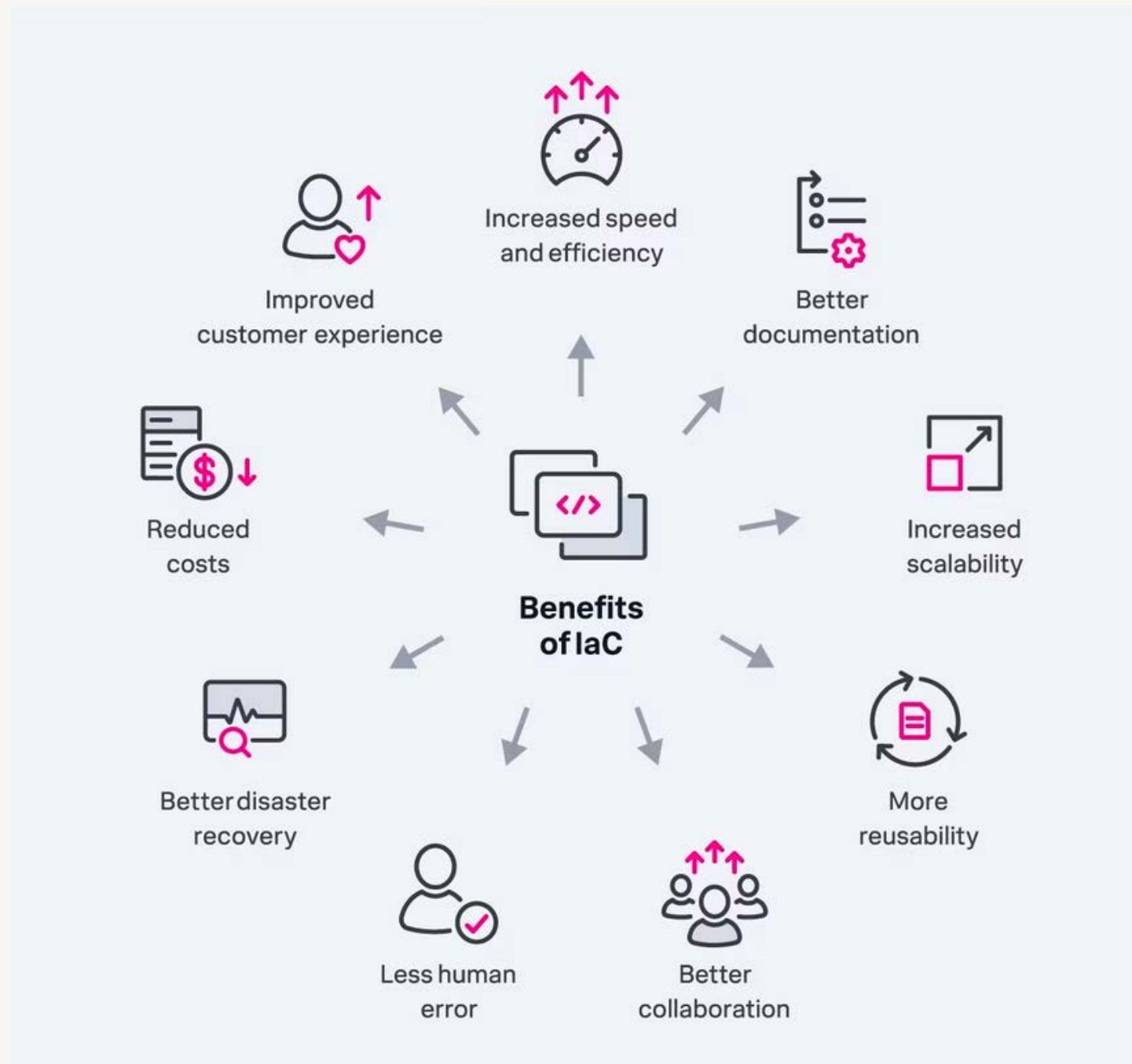
**2016**

High-performing companies began adopting DevOps as the new norm

# Convergence of AI and DevOps

DevOps consist of lot of automation and involves steep learning curve to understand the current technologies

# Understanding AI in IaC



Infrastructure as Code is a process of automatically provisioning and configuring infrastructure using Code and Scripts

SOURCE:

[https://www.splunk.com/en\\_us/blog/learn/infrastructure-as-code-iac.html](https://www.splunk.com/en_us/blog/learn/infrastructure-as-code-iac.html)



# Understanding AI in IaC

## ◆ **Automated IaC Generation**

AI can automate the generation of IaC code based on natural language queries, reducing the need to write code from scratch or use templates

## ◆ **Proactive Assistance**

AI tools like GitHub Copilot can assist in generating IaC code, providing a head start for DevOps engineers and increasing productivity

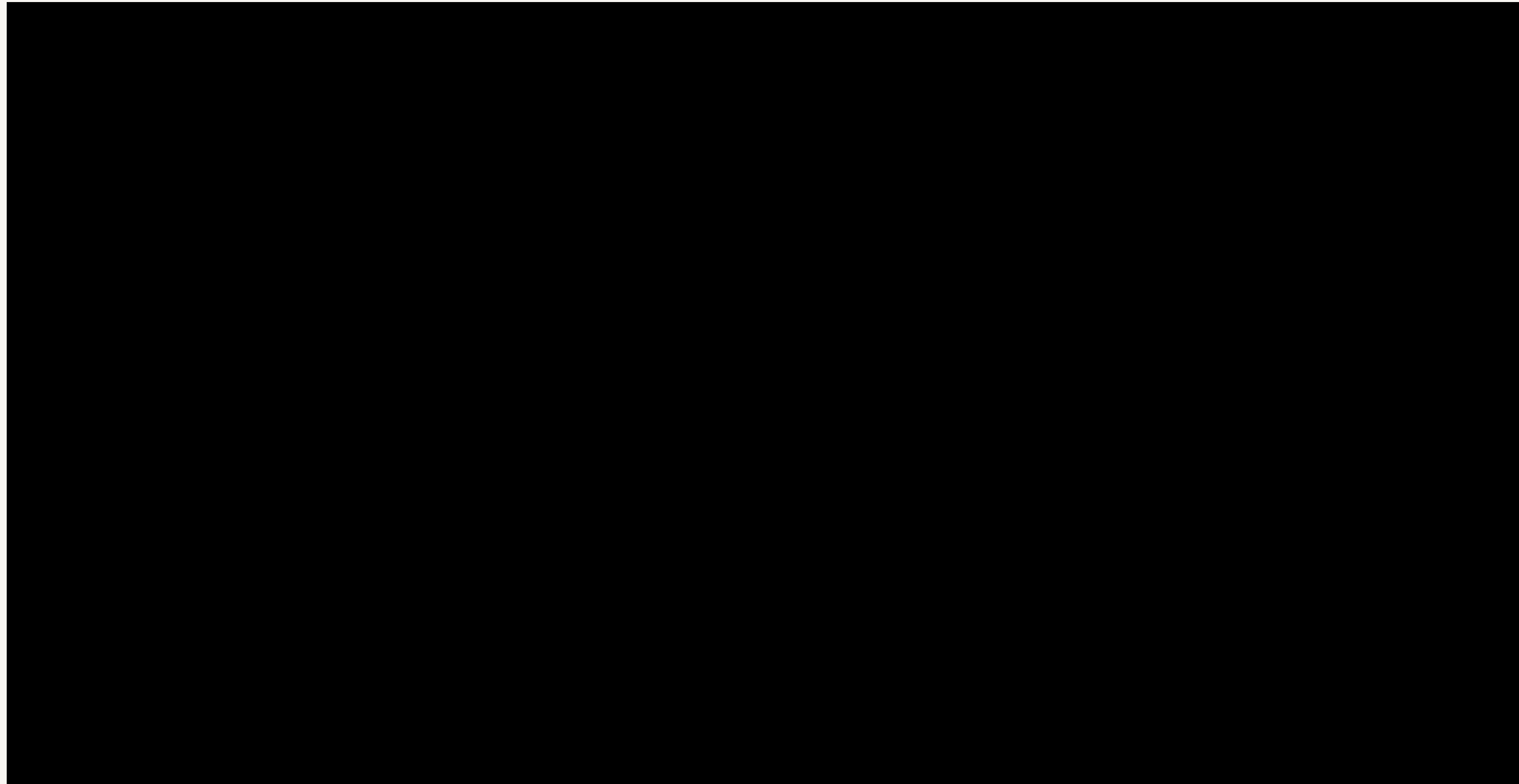
## ◆ **Cost Optimization**

AI can optimize infrastructure design, identify cost-saving opportunities and improve efficiency.

## ◆ **Quality and Security**

Using AI, SRE and DevOps engineers can ensure the quality and security of their DevOps pipeline.

# Case Study: Generating Serverless API



# Automated Optimization



## Infrastructure optimization

AI insights aid DevOps teams in adapting to usage patterns, anticipating demand, and optimizing infrastructure with minimal human intervention.



## Resource Optimization

AI can help analyze historical data, usage patterns, and performance metrics to optimize resource allocation and ensure efficient use of infrastructure



## Automated testing

AI can be used to automate the testing process, improving the speed and accuracy of testing.

# Enhancing Security and Compliance

## Improving Security

AI can help identify and mitigate security vulnerabilities faster by analyzing code and suggesting improvements.

## Automated Compliance Checks

AI can automate standard or user-generated compliance checks, resulting in faster development.

## Access Control and Identity Management

IAM and Access control are very important for security. AI can generate an IAM policy based on usage.

# Case Study: IAM Policy Generation

The screenshot shows a web browser window with the URL `cloudcode.ai/IAM-Generator`. The browser's address bar includes navigation icons and a search bar. Below the address bar, a dark navigation bar contains a Discord icon, the text "CloudCode AI @ Discord - Join our community on Discord to learn more!", and a "Connect Now" button with a right-pointing arrow.

The main content area features the "cloudcode.ai" logo on the left, followed by navigation links for "Product", "About", and "IAM Policy Generator". On the right side of this bar is a "Request Access" link with a right-pointing arrow.

## IAM Policy Generator

Safeguard your cloud assets and data while maintaining seamless accessibility by automating the creation of finely tuned IAM policies tailored to the principle of least privilege.

The interface includes a form with a dropdown menu set to "Amazon Web Services" and an input field labeled "Enter Account ID...". Below this is a "PROMPT" section with a text area containing the text "Create read only access to VPC without access to" and a right-pointing arrow icon.

Below the form, a text prompt reads: "Liked this feature? Join our waitlist to get access to our beta with more such cool cloud features!"

## Request access

Join our waitlist to receive your exclusive beta access

**Product Updates**  
We'll notify you of new features and product launches.

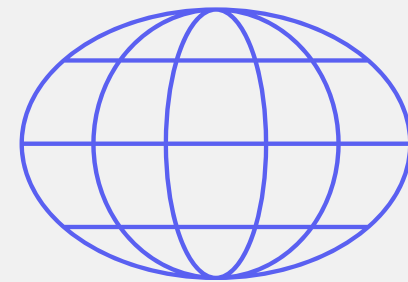
**No spam**  
We promise to not send you any unnecessary emails.

# Error Detection and Self-Healing Systems



## SELF HEALING

AI-powered self-healing systems can automatically detect and resolve issues, reducing the need for manual intervention and significantly improving system reliability



## PREDICTIVE ANALYTICS

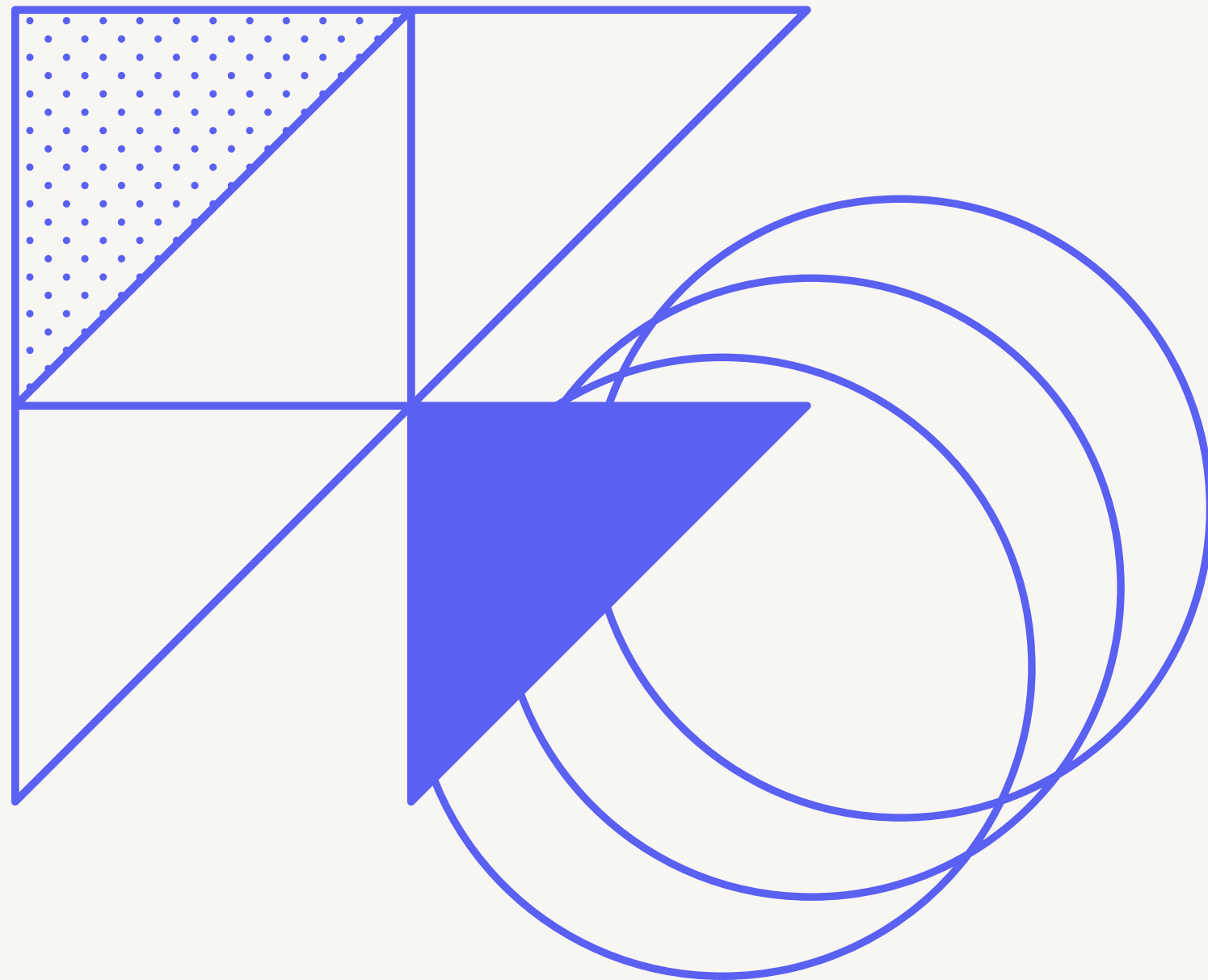
AI can be integrated into DevOps monitoring tools to predict and notify teams often before issues occur



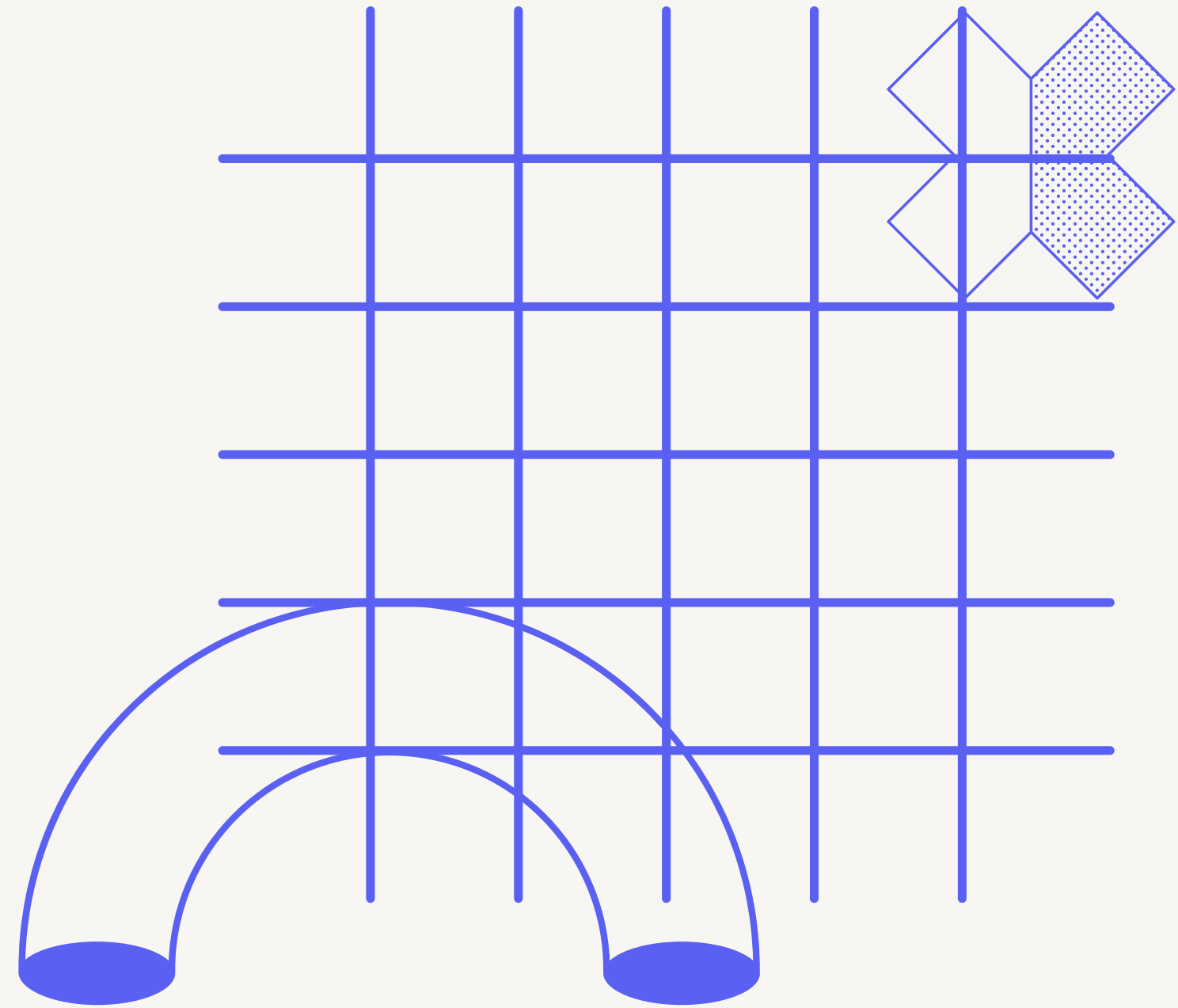
## ANOMALY DETECTION

AI tools can proactively detect anomalies in engineering code and data and respond with corrective actions

# Conclusion Slide



AI will be a game-changer in IT resource management, and AI-powered DevOps tools are going to supercharge Software Development.



# Thank you!

Email us at [saurav@cloudcode.ai](mailto:saurav@cloudcode.ai)  
if you have more questions.