

Careers in Distributed Computing

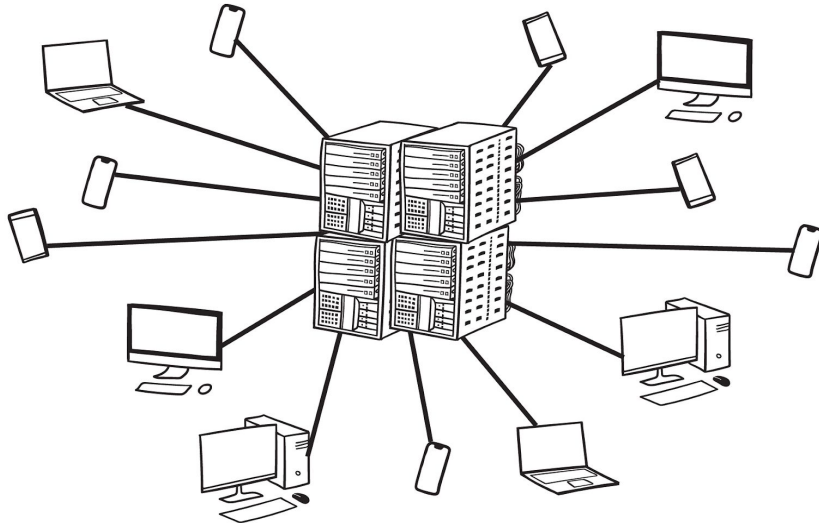
DevOps, Blockchain, and Cyber
Security

What's coming up?

1. Introductions!
 2. Is distributed computing important?
 3. What is DevOps?
 4. What is Blockchain?
 5. What is Cyber Security
 6. How are they related?
 7. Careers in DevOps, Blockchain, and Cyber Security.
 8. Preparing yourself and portfolio
 9. Professional training Fellowships
 10. Q&A
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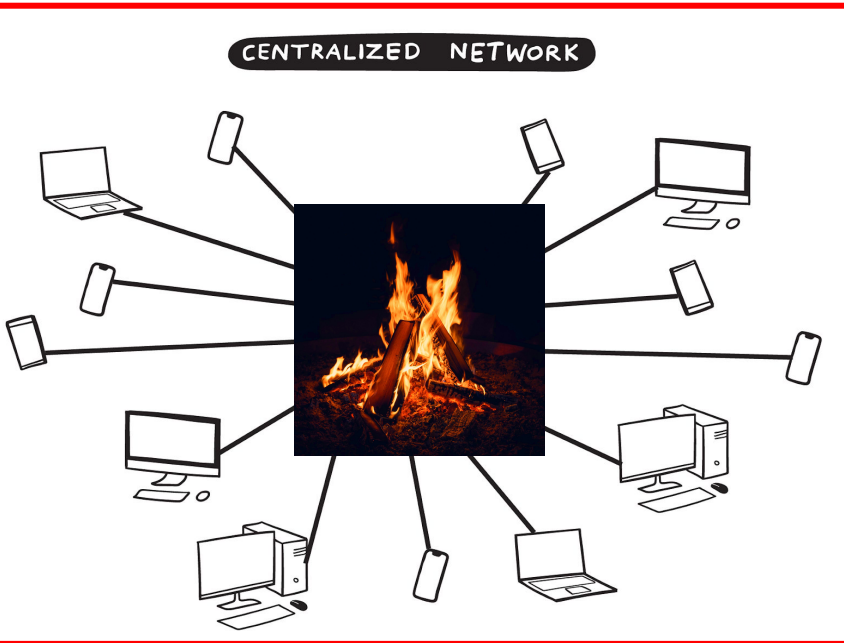
Why does decentralization matter?

CENTRALIZED NETWORK



Why does decentralization matter?

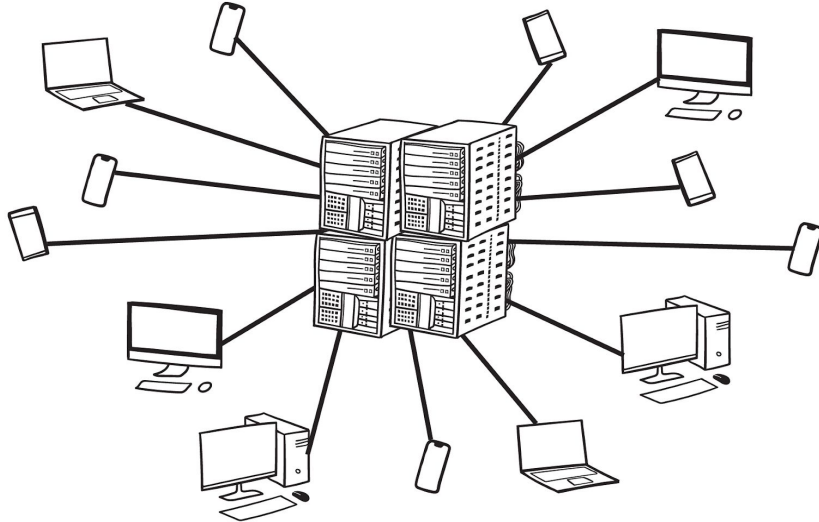
When the central servers experience issues, what happens to your



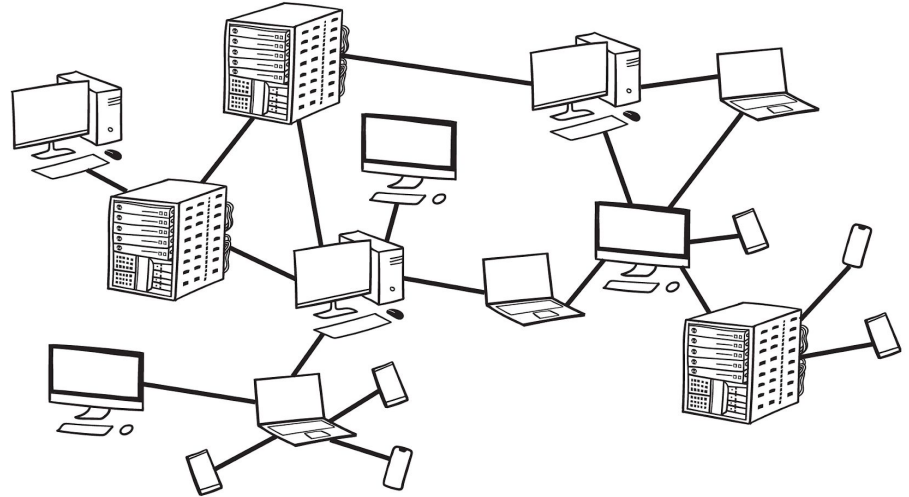
- Money?
- Files?
- Conversations?
- Network access?
- Programs?

Why does decentralization matter?

CENTRALIZED NETWORK



DECENTRALIZED NETWORK

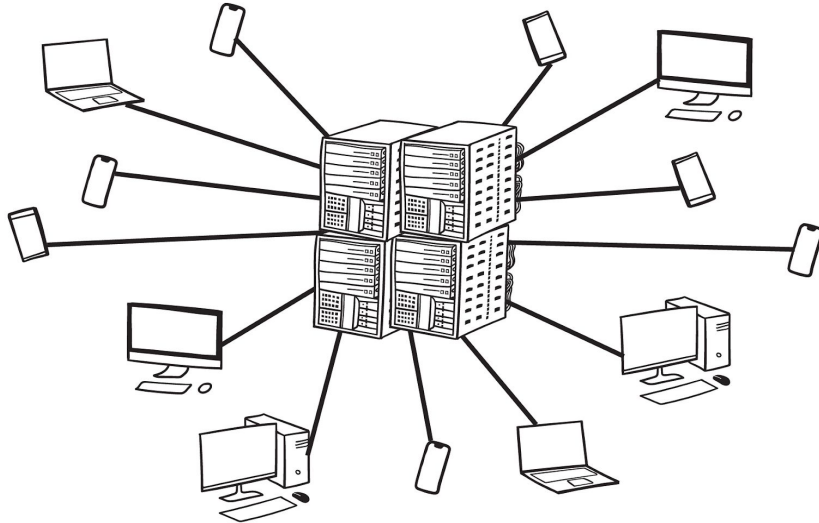


Decentralized network:
no central point of failure or censorship

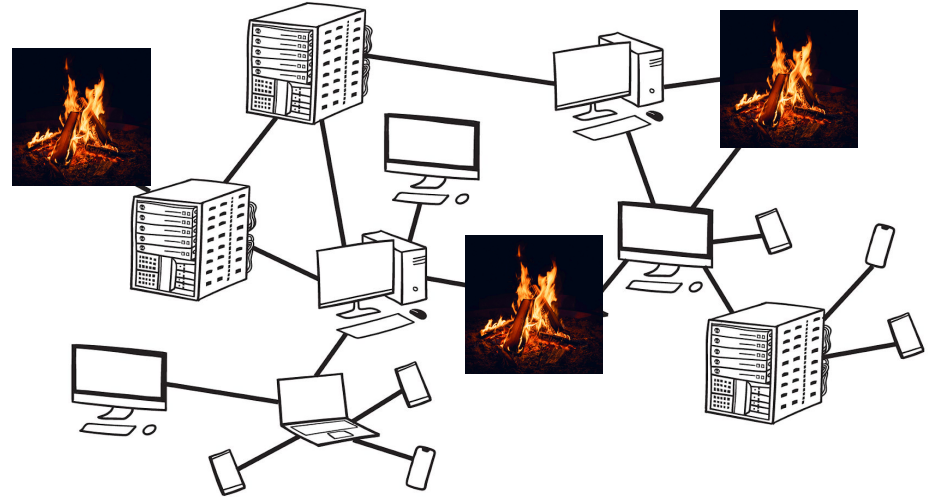
Decentralized governance:
no central administrator

Why does decentralization matter?

CENTRALIZED NETWORK

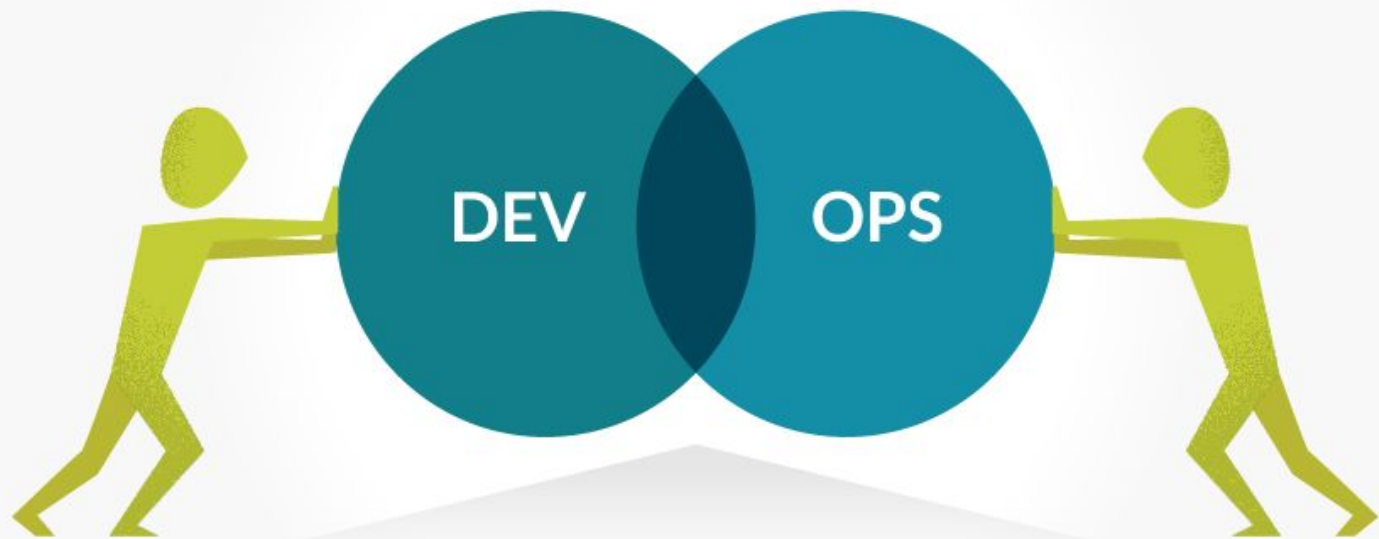


DECENTRALIZED NETWORK



Decentralized network:
no central point of failure or censorship

Decentralized governance:
no central administrator



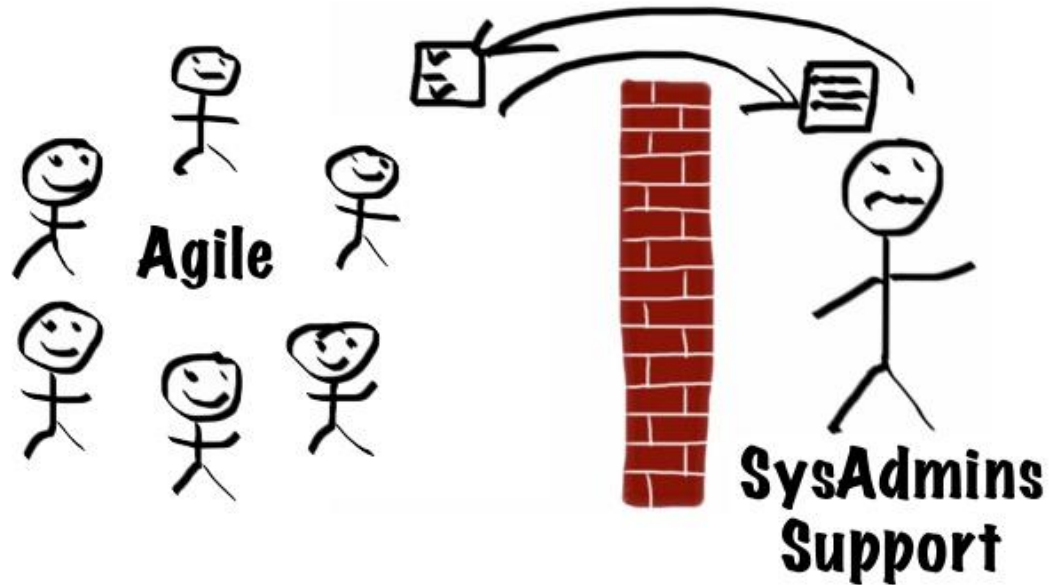


*DevOps is a manifestation of
creating dynamic, learning
organizations that continually
reinforce high-trust cultural
norms.*

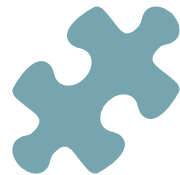
The old way...



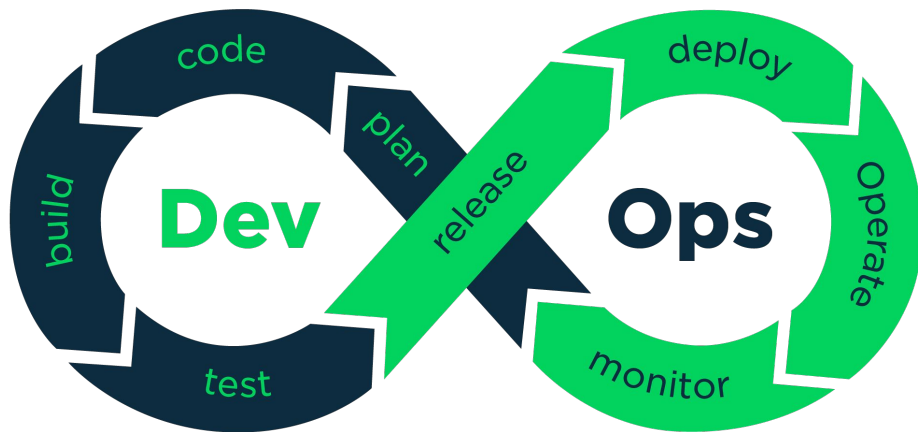
Development vs Operations



DevOps



*Synergy between
developers and
operations!*



DevOps Engineering



- Working on Cloud or On-Prem systems
- Automate infrastructure provisioning
- Ensure site reliability
- Enable scalability
- Improve agility of platform
- Enable developers to be autonomous
- Monitor and trace system's health

BLOCKCHAIN

POWERING THE FUTURE



Esha

Municipal City Clerk

When Esha gets to work she manages licenses and permits, public records, and supervises local election ballots.



Improves
Transparency



Faster
Process

Identity
Management



Expedited
Security
Screening



Travel
Management



Samuel

Regional Sales Director

Samuel uses biometric identity verification to make his frequent business trips a smooth travelling experience.

Blockchain append-only database

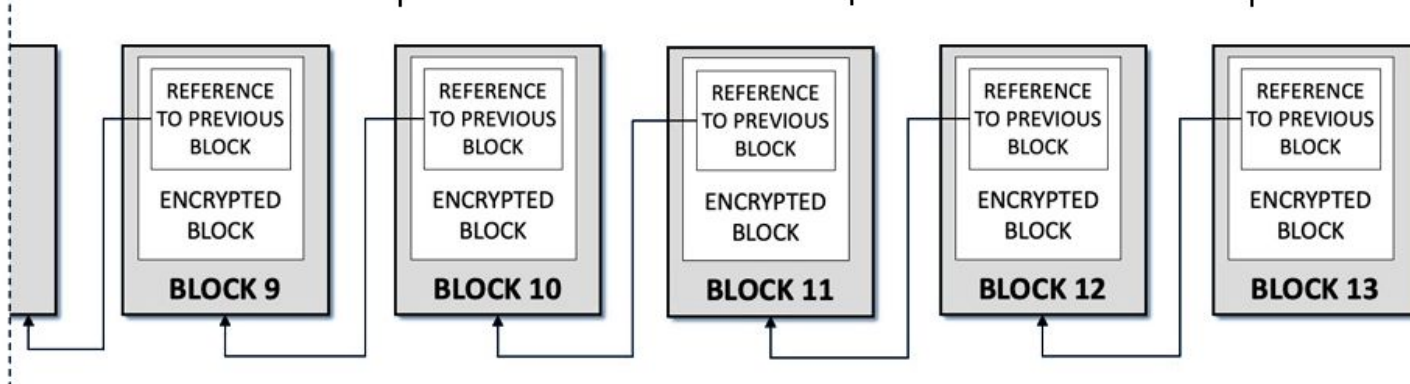
DECENTRALIZATION



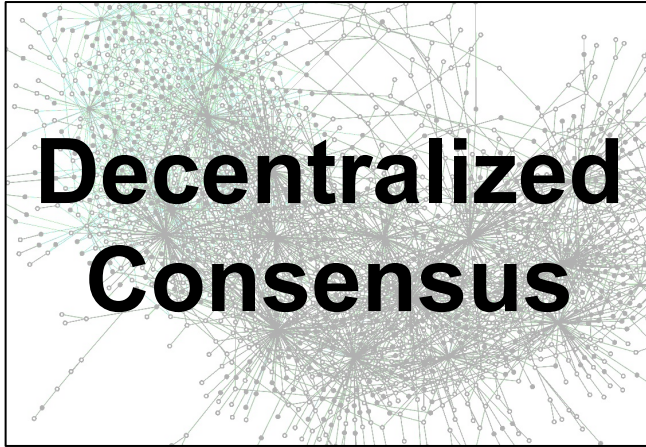
TRANSPARENT



IMMUTABLE



Terminology 101



**Principles for creating
trustworthy networks from
untrusted parties.**

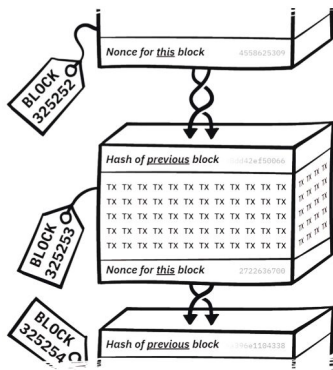
Built on technologies such as:

- Directed acyclic graphs (DAGs)
- **Blockchain data structure**
- Recursive databases
- *(and more)*

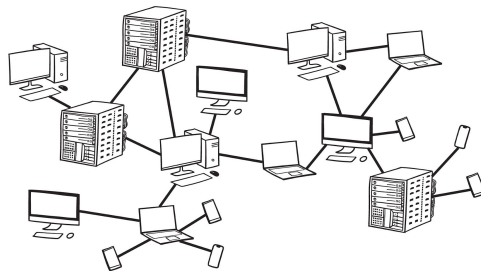
Disrupting major domains:

- Supply chain management
- **Money (cryptocurrencies)**
- Distributed computations
- Digital identification
- *(and more)*

Blockchain + decentralization = scaling pains

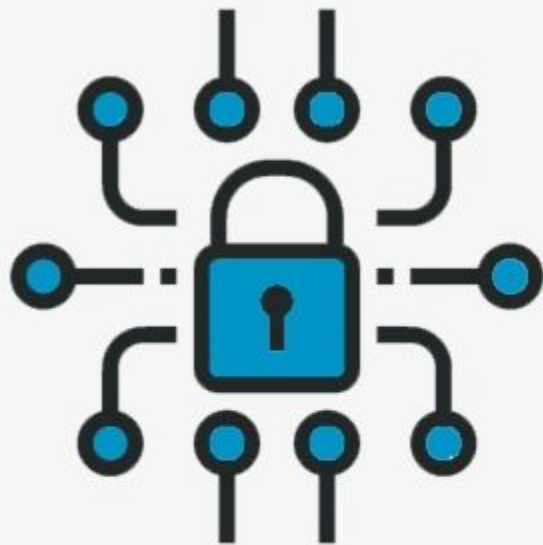


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CYBER
SECURITY



Cybersecurity is a term used to refer to security of online services and information.

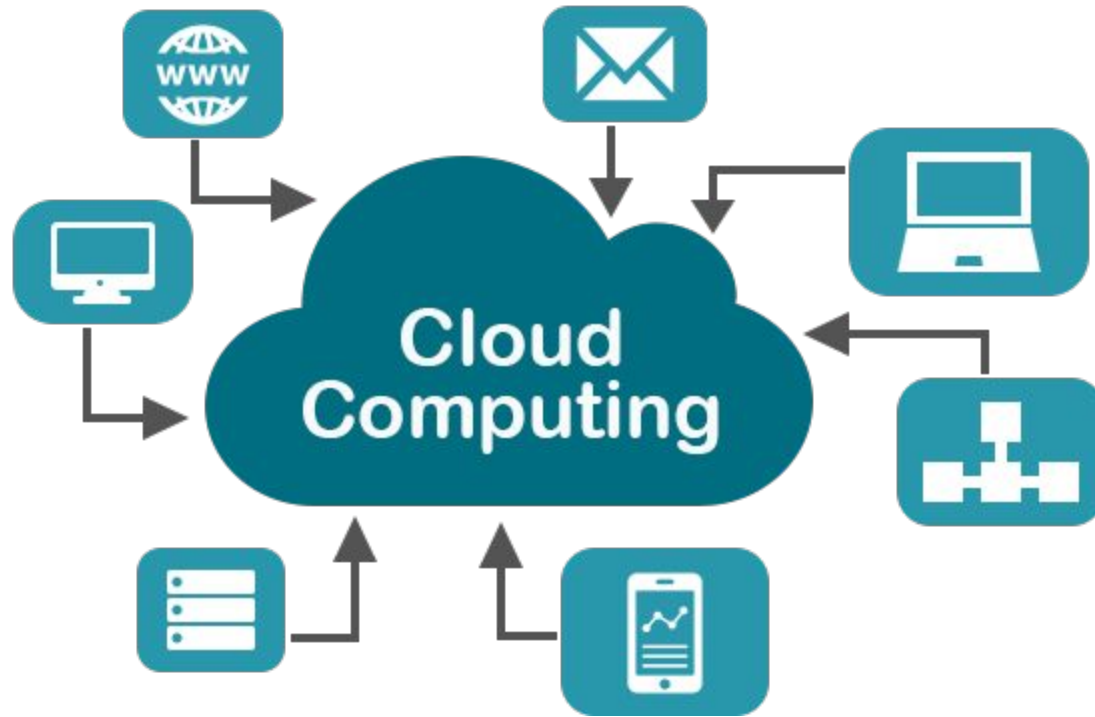
Attacks Are Expensive !!!!



Global average total cost of a data breach

Measured in US\$ millions



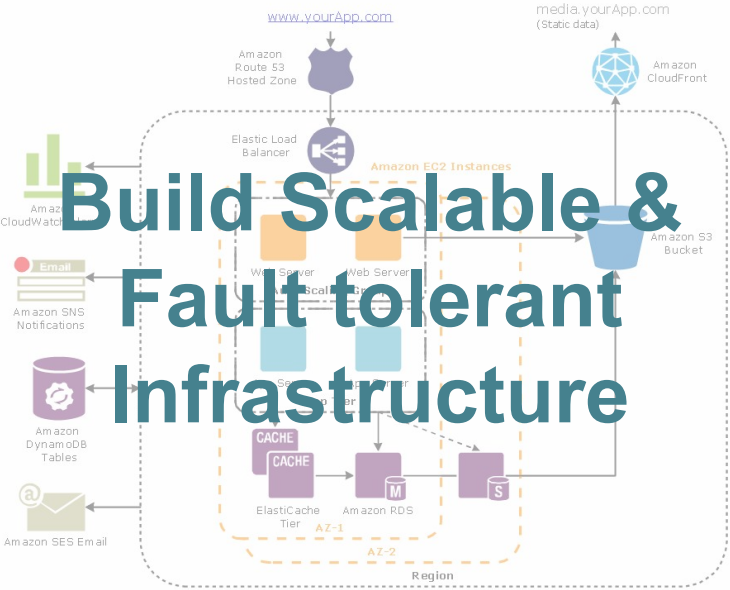


How are they all related?

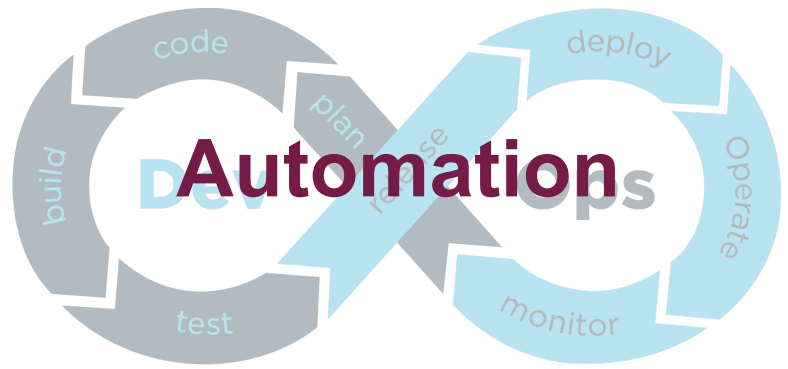
Careers in DevOps, Blockchain, and Cyber Security



What do DevOps engineers do?



Build Scalable & Fault tolerant Infrastructure



Cross Functional



DevOps Concentrations

Infrastructure as Code

Configuration Management

Distributed Tracing

Service Discovery

Serverless

DevSecOps

**Continuous
Integration/Deployment**

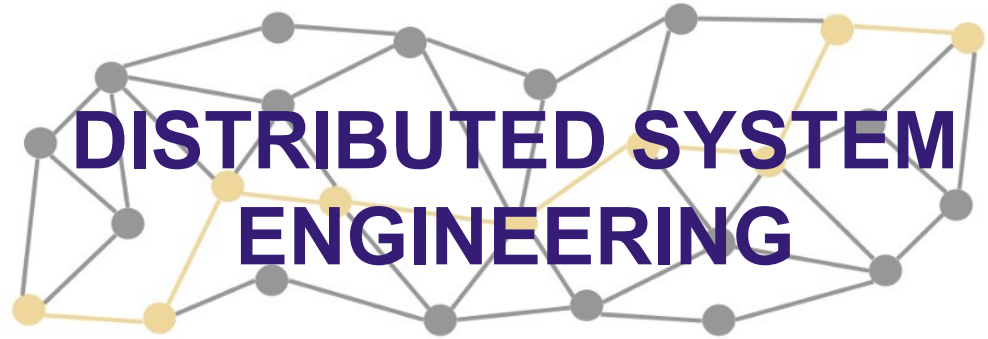
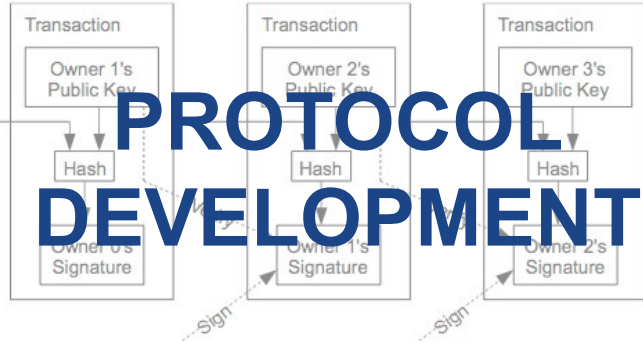
Monitoring & Logging

Container Orchestration

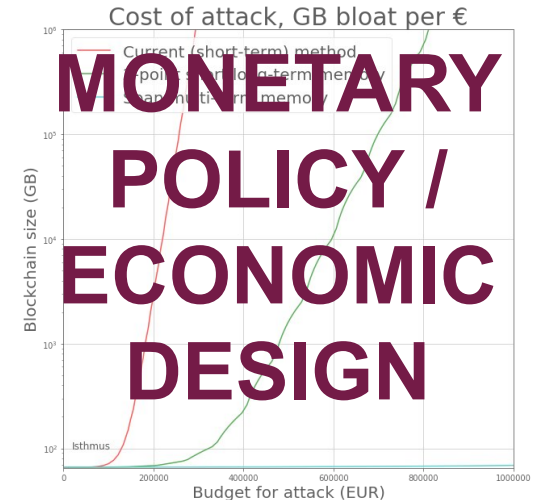
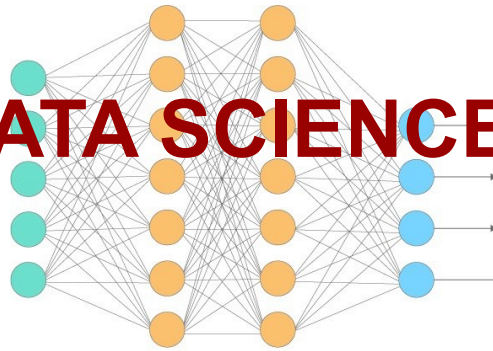
Who is looking for DevOps engineers?



What do Blockchain engineers do?



DATA SCIENCE



Stack:	Skills
B2C	UI, JS, Web
B2B	Coding business logic on top of protocols
dApp	WASM, Solidity
Middleware	Go, Rust
Base layer	Go, Rust, Java, C
SPL	Hardware, LLS

misc	Python, APIs, RPC ops, etc.
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The blockchain + dApp stack

Who is looking for blockchain engineers?

 Square  sparkswap 

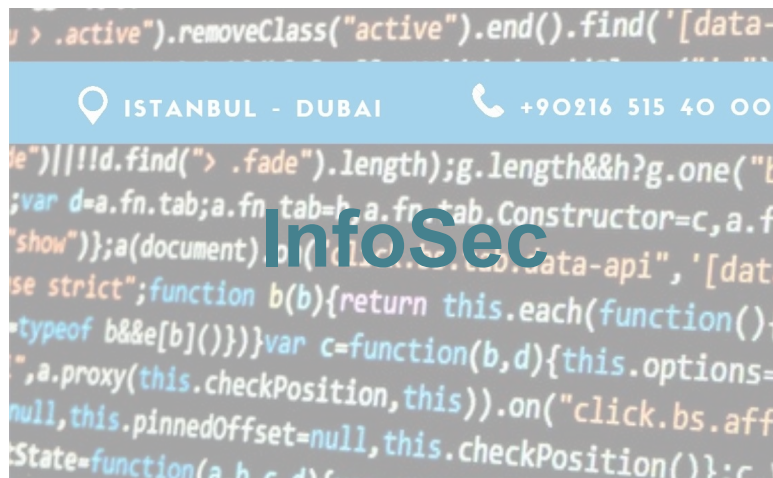
 CODA   0x $\delta Y / \delta X$

 BINANCE

 GAUNTLET

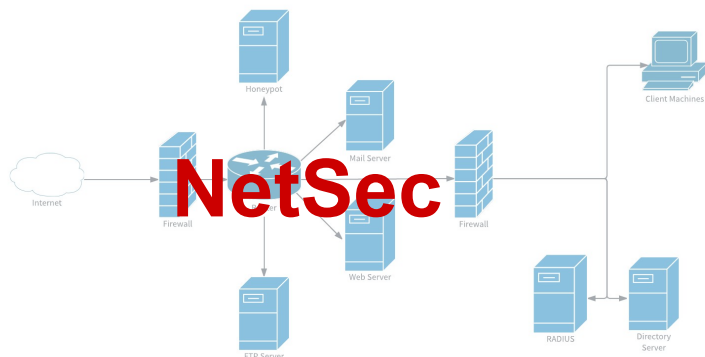
 unchained
capital

What do Security engineers do?



Configuration Management	Continuous integration	Microservices	Collaboration	Monitoring	Development
 CHEF	 Jenkins	 docker	 JIRA Software	 MONIT	 Visual Studio
 SALTSTACK	 TeamCity	 Kubernetes	 Ganglia	 APACHE ACTIVEMQ	
 puppet	 CodeShip	 TRITON Compute	 HipChat	 SNMP	 Vagrant
 ANSIBLE	 circleci	 ElasticBox	 Trello Organize anything. Together.	 cacti	 Microsoft Azure

AppSec



NetSec

Security Technologies

- Access Management
- Cloud-Based Security
- Data Leak Prevention
- Intrusion Protection
- Firewalls
- Data Encryption
- Botnet Protection
- Endpoint Protection
- Malware/Virus Security
- Wireless Security

Security Skills

- Communication Skills
 - Ability to Work in a Team
- Organizational and Problem Solving Skills
- Programming Skills
- Understanding of Security Principles
- Risk Analysis
- Network Protocols

Who is looking for Security engineers?





Preparing Yourself



How to you prepare yourself for DevOps Engineering?



- Prepare a clean & updated **LinkedIn profile**



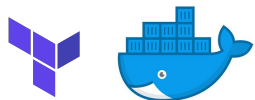
Linux

- **Domain knowledge**
 - AWS, GCP, AZURE
 - Linux distros
 - Networking, Databasing, etc.
 - Systems Thinking



- **Tools:**

- | | |
|--------------|-----------|
| - Kubernetes | - Jenkins |
| - Terraform | - Docker |
| - Ansible | - Yaml |



- Showcase coding and documentation skills with a **strong GitHub portfolio**

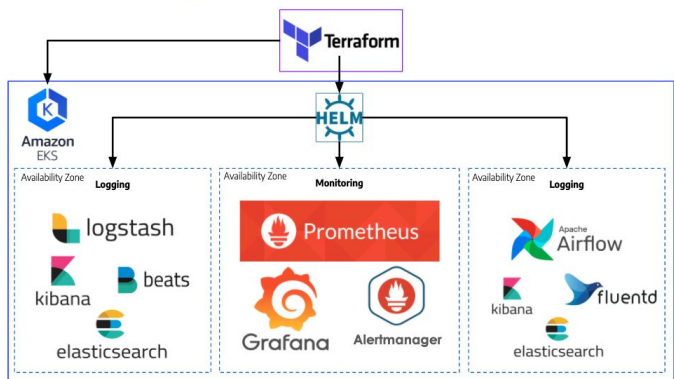
Building a strong portfolio

- Creating open source tools to improve software development
- Automating deployments
- Building end-to-end systems

Terrastax

Qaif Shaikh

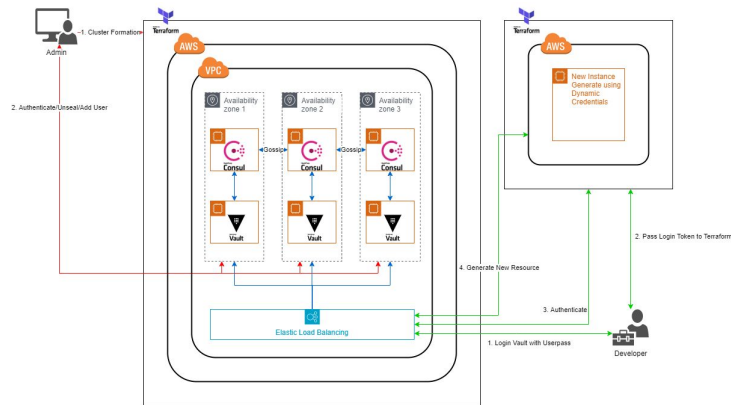
One Click deployment and integration for prometheus, grafana, airflow, E.L.K, and in k8s.



Securitas

Aditya Munot

Terraform module for secret management in Vault. Securing keys before they generate.



How to you prepare yourself for Blockchain Engineering?



- Prepare a clean & updated **LinkedIn profile**



- **Domain knowledge**
 - Cryptography basics (Why use a hash? Why use a nonce?)
 - Mental models for incentive structures
 - Designing for adversarial environments
 - Understanding decentralization - benefits and drawbacks



- **Coding ability, learn one or two of these:**
 - Go
 - Rust
 - Solidity
 - C++
 - Python
 - Java/script



- Showcase coding and documentation skills with a **strong GitHub portfolio**

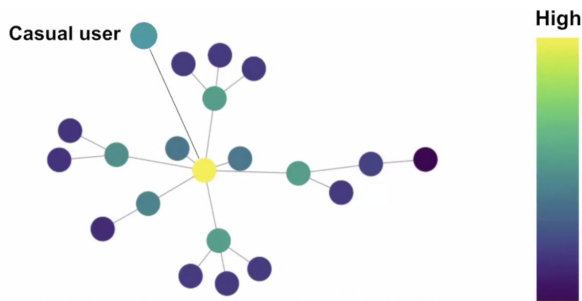
Building a strong portfolio

- Contribute to codebases of major cryptocurrencies
- Build decentralized applications and platforms
- Create open-source foundational libraries

Lightning Channel Optimizer

Darius Parvin

Identifies the optimal lightning node placement (channel connections) based on graph analysis of the network topology.

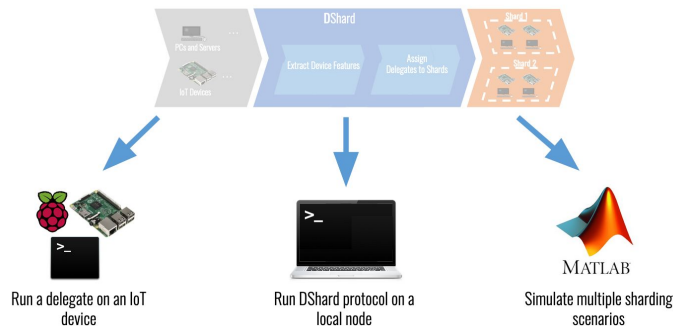


fellows.link/darius

DShard

Yaman Sharaf-Dabbagh

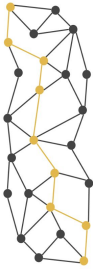
A dynamic sharding framework for the internet of things (IoT), using the IoTeX protocol.



How to you prepare yourself for Security Engineering?



- Prepare a clean & updated **LinkedIn profile**



- **Domain knowledge**

- Computer and network security, threat modeling, vulnerability assessment, incident response, Security protocols, hardening endpoints.
- Critical thinking/Problem solving.
- Relevant areas of expertise: Networks, data analytics, compliance, cloud infrastructure, app development, operating systems.



- **Coding ability, learn one or two of these:**

- | | |
|---------------------|----------|
| - Go | - C++ |
| - Rust | - Python |
| - Javascript | - Java |



- Showcase coding and documentation skills with a **strong GitHub portfolio**

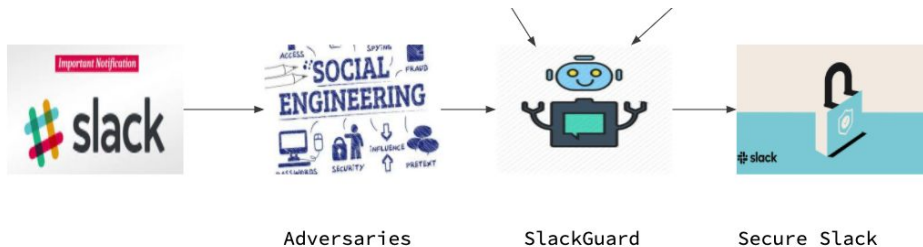
Building a strong portfolio

- Break systems
- Build applications and platforms

SlackGuard

Aashray Aggarwal

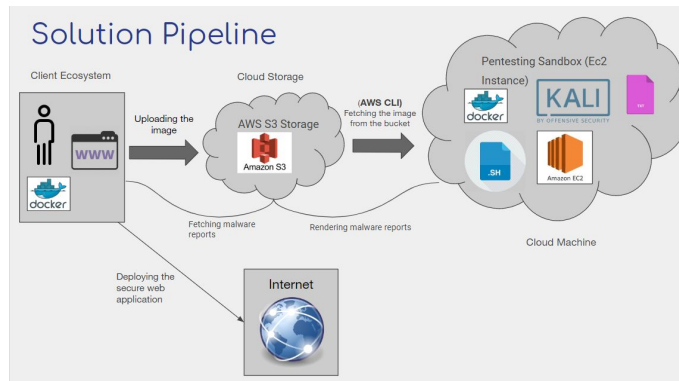
Security bot for Slack



Secure PenBox

Shasheen Bandodkar

A sandboxed cloud penetration testing environment that allows user test web application





INSIGHT



How does Insight prepare YOU?

- **Lead your own engineering project**
- **Learn through the guidance and mentorship of top experts in the field**
- **Rapidly gain domain knowledge and practical experience**
- **Career coaching, interview preparation, and technical challenges**
- **Professional feedback for polishing your LinkedIn, résumé, and GitHub**
- **Personalized introductions to top companies and projects, who compete to hire Insight engineers**

INSIGHT IN A NUTSHELL



Q&A

Rahil Bhatnagar - Program Director, DevOps - rahil@insightfellows.com

Yaman Sharaf-Dabbagh - Program Director, Security - yaman@insightfellows.com

Start your application today! Deadline: July 20*

apply.insightfellows.com