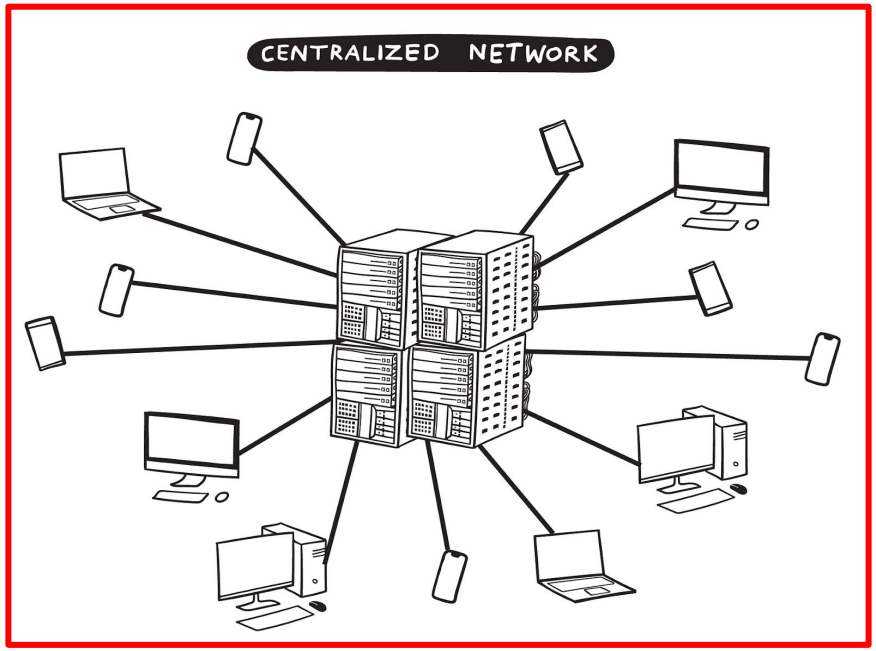
Careers in Distributed Computing

DevOps, Blockchain, and Cyber Security

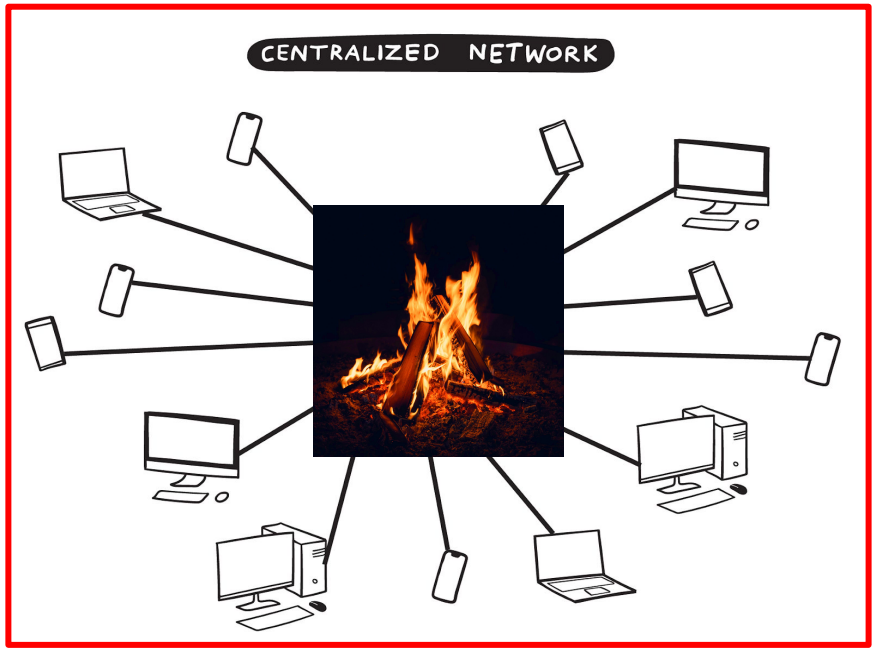
What's coming up?

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

Why does decentralization matter?



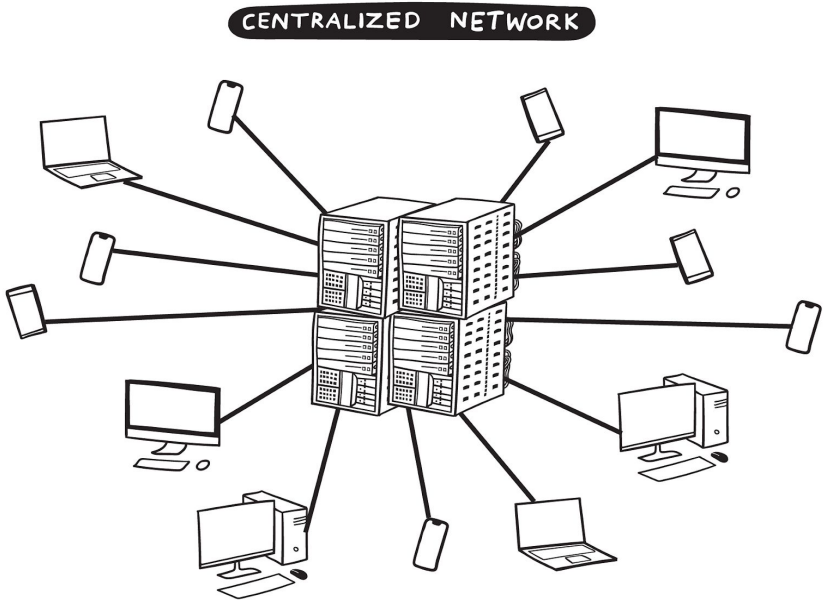
Why does decentralization matter?

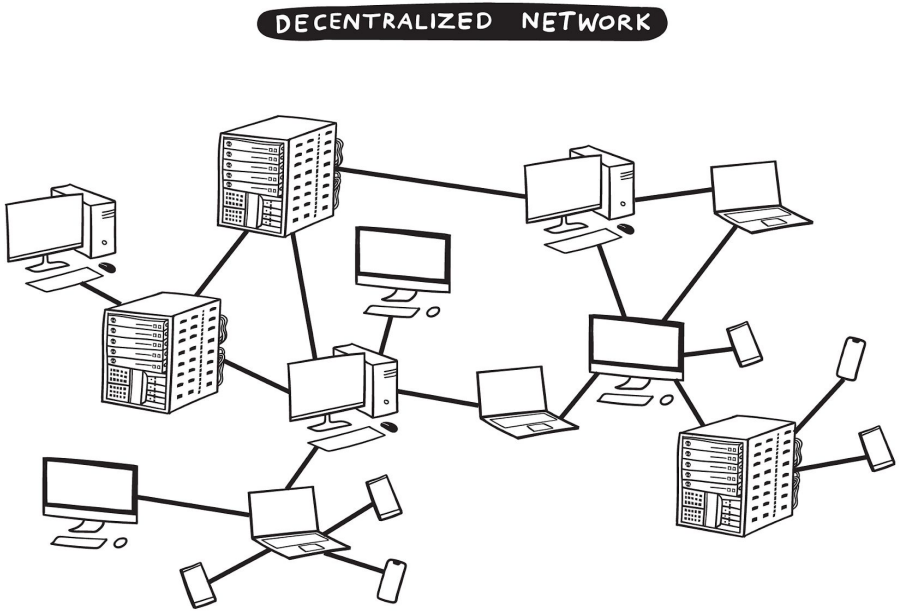


When the central servers experience issues, what happens to your

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

Why does decentralization matter?

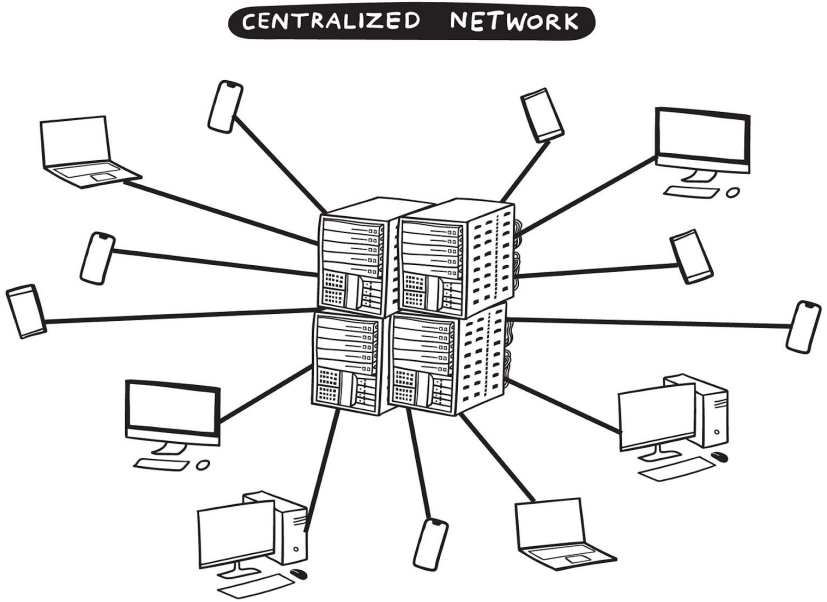


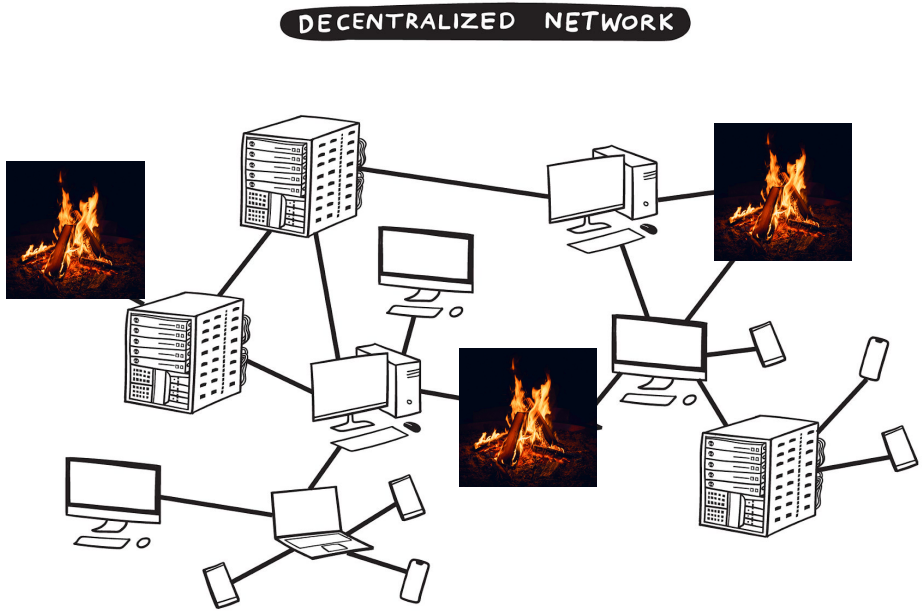


Decentralized network:
no central point of failure or censorship

Decentralized governance:
no central administrator

Why does decentralization matter?





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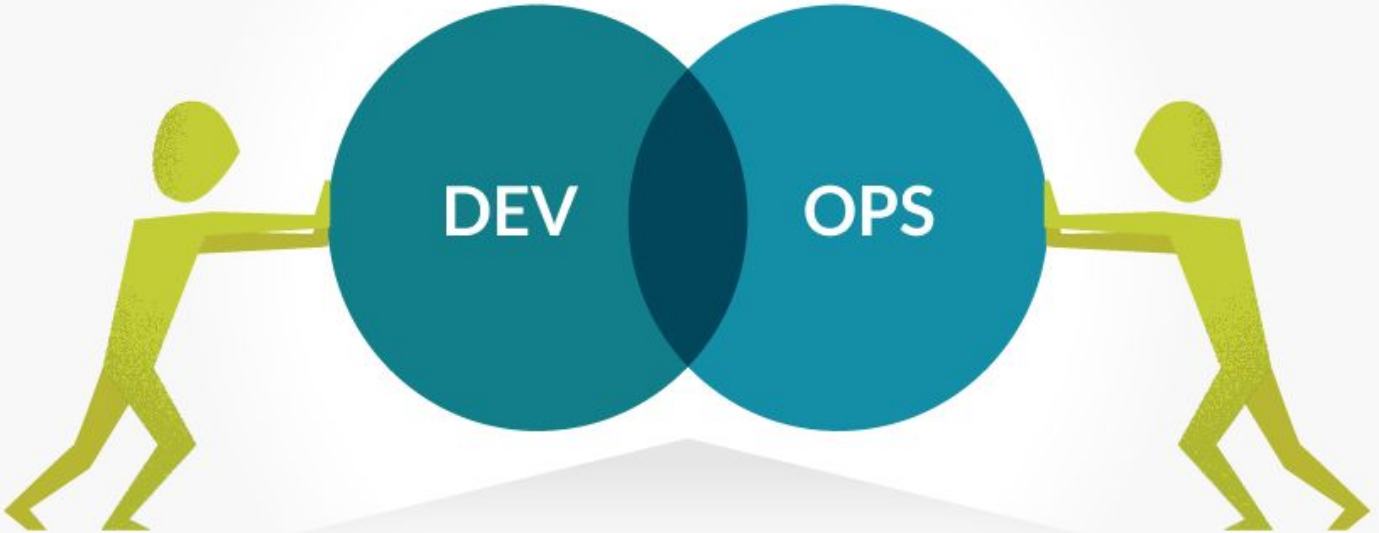
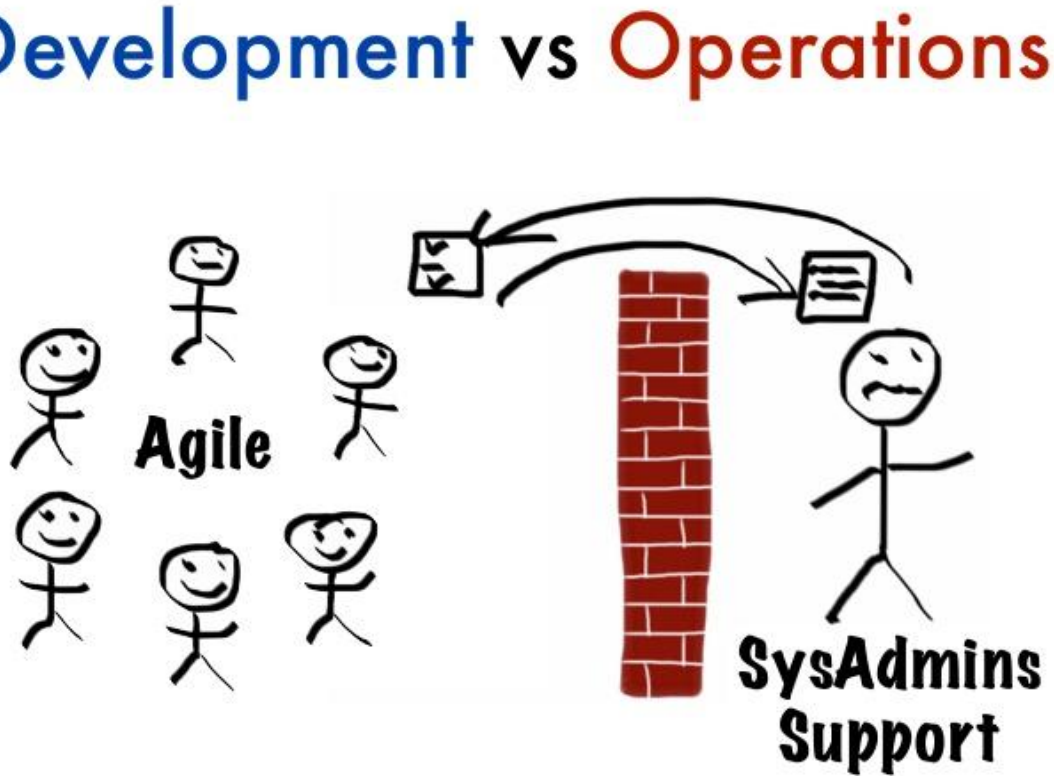

DEV
OPS

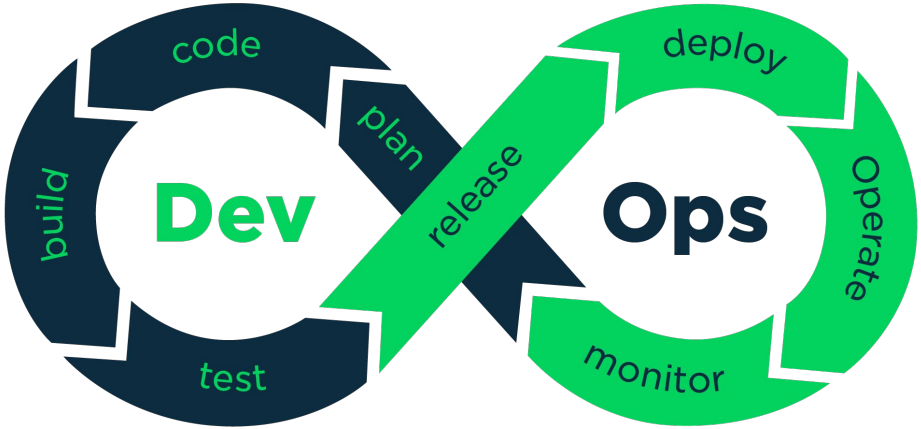
DevOps is a manifestation of creating dynamic, learning organizations that continually reinforce high-trust cultural norms.

The old way...



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.

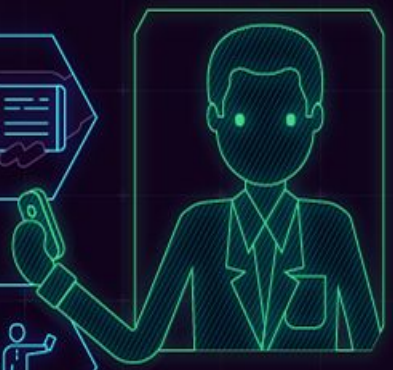
Improves Transparency

Faster Process

Identity Management

Expedited Security Screening

Travel Management

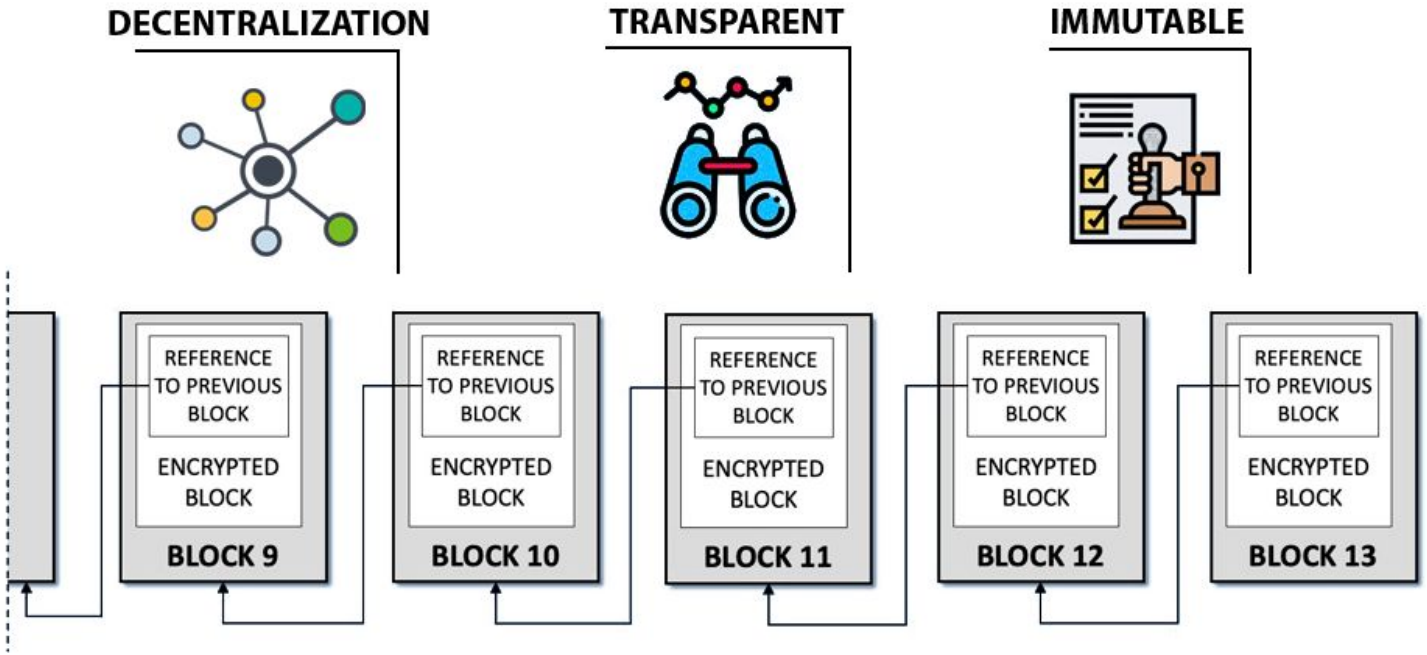


Samuel

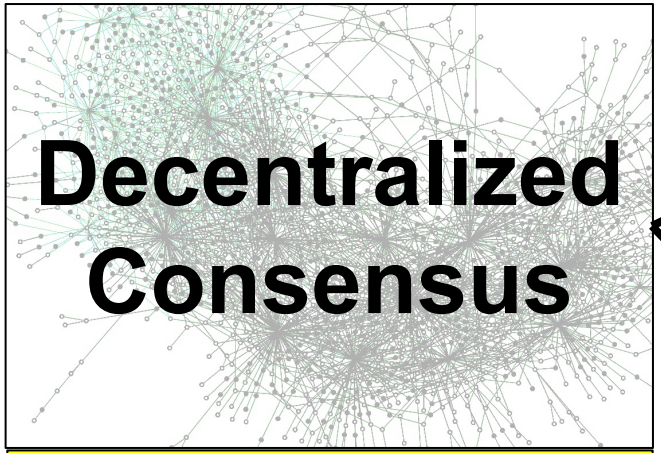
Regional Sales Director

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

Blockchain append-only database



Terminology 101



Principles for creating trustworthy networks from untrusted parties.

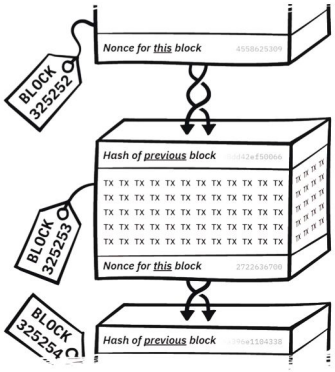
Built on technologies such as:

- 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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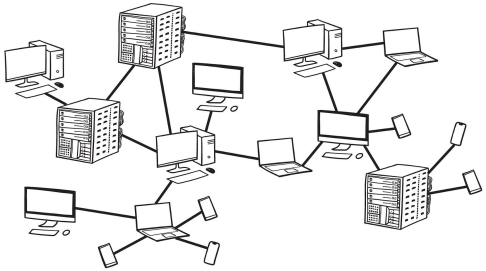

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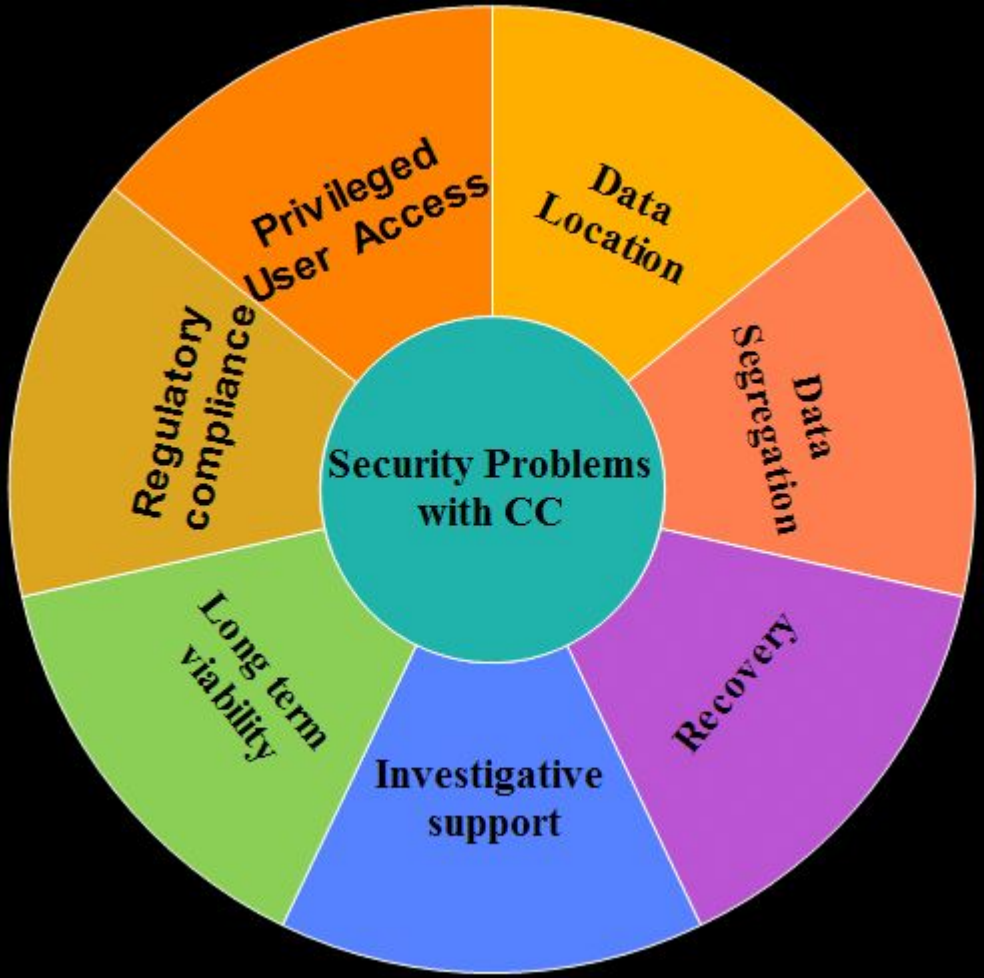
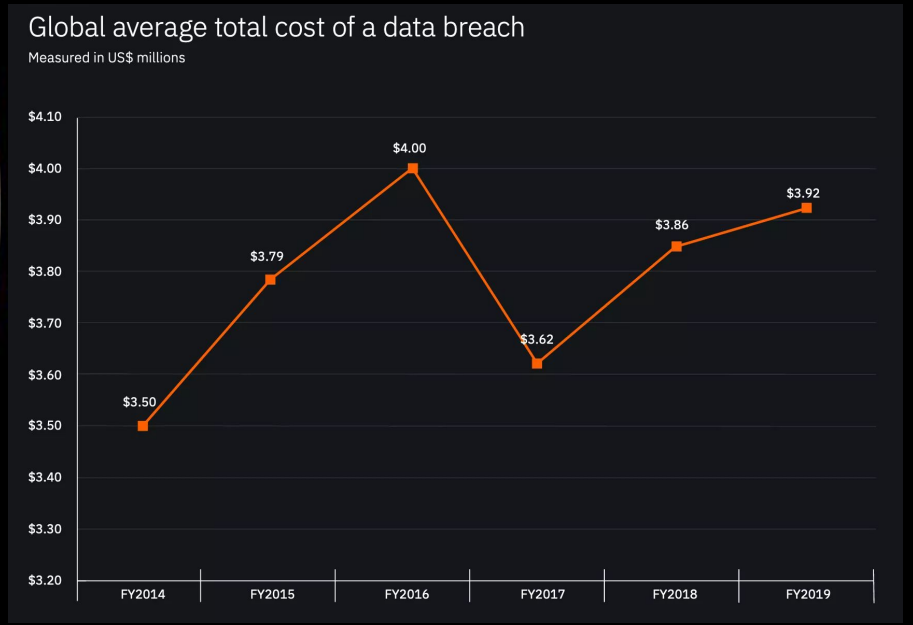
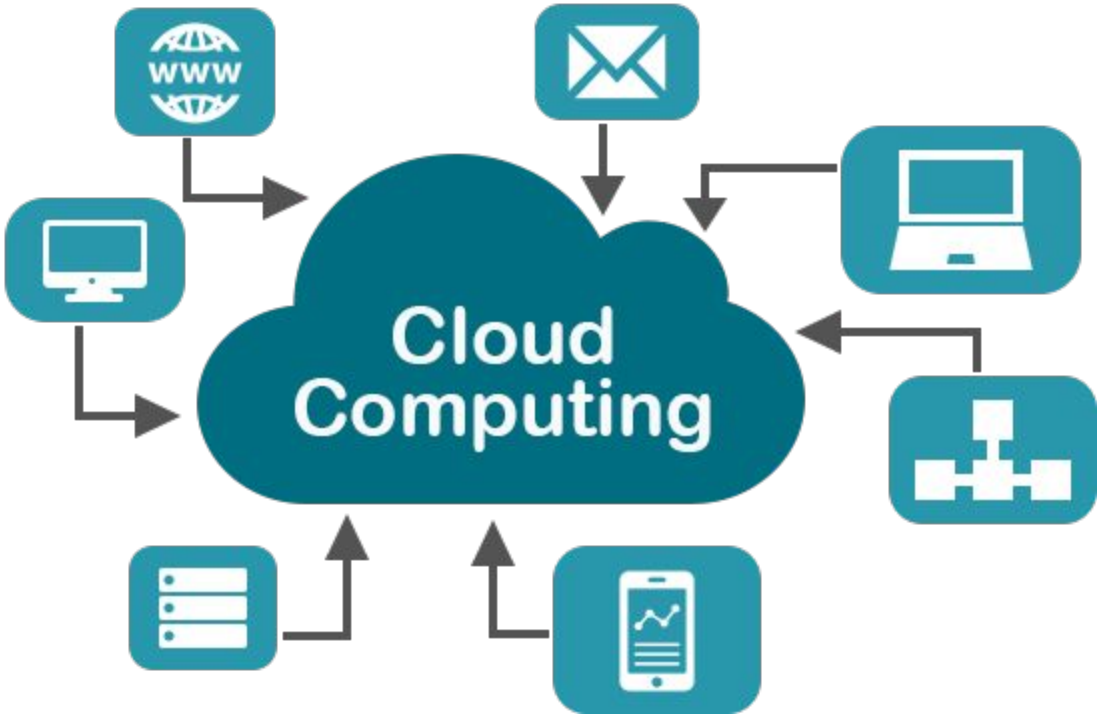
CYBER SECURITY

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

Attacks Are Expensive !!!!



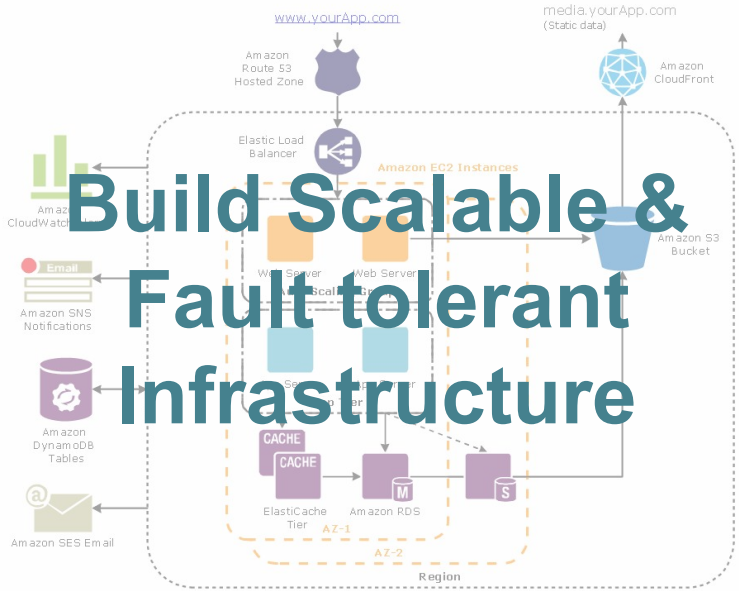




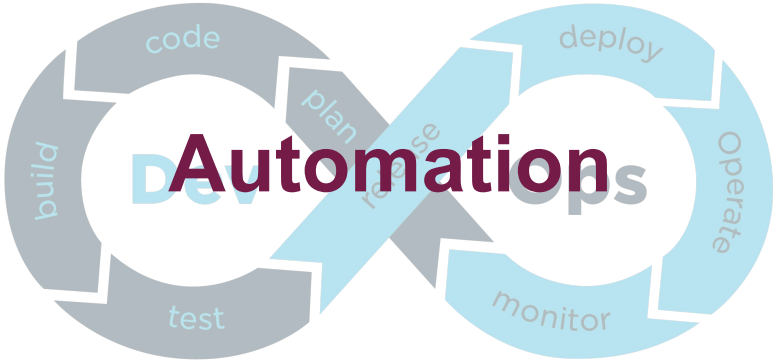
How are they all related?

Careers in DevOps, Blockchain, and Cyber Security

What do DevOps engineers do?



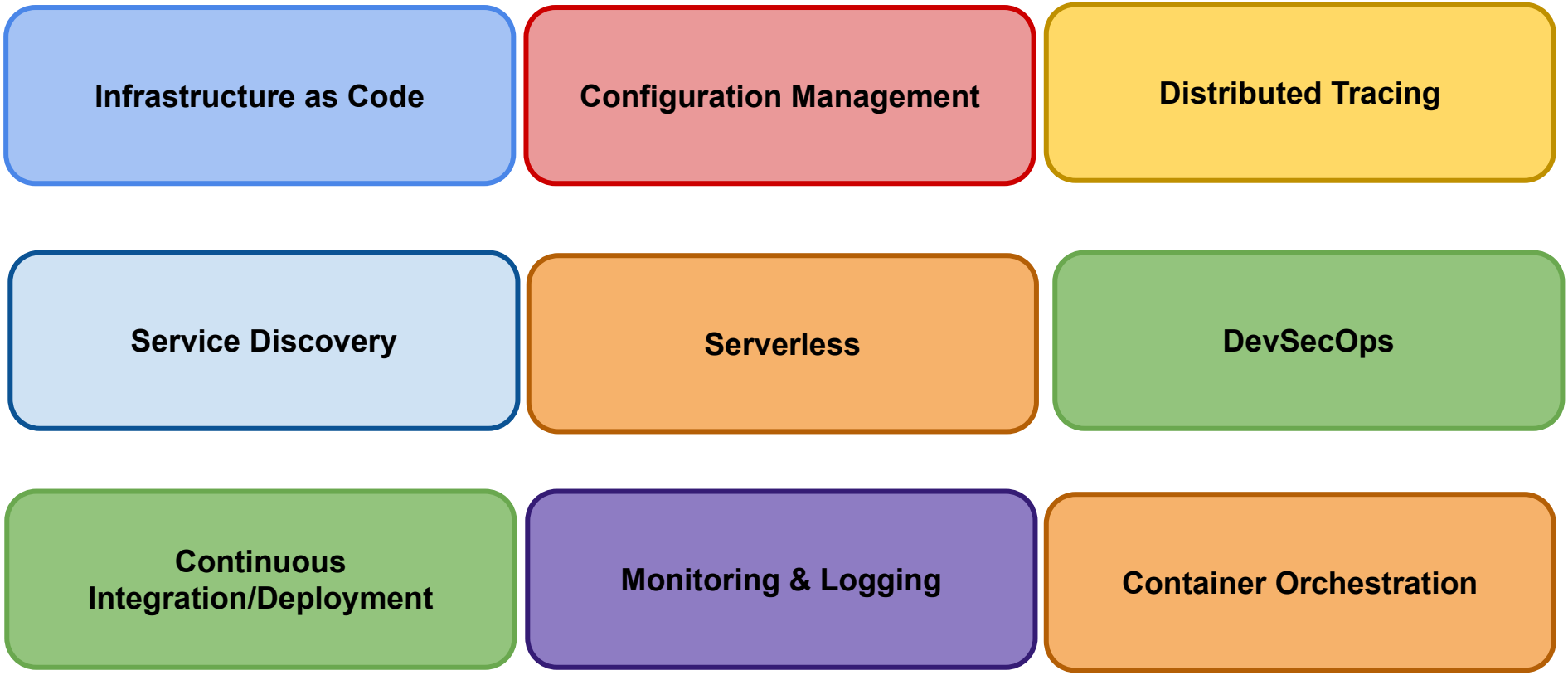
Build Scalable & Fault tolerant Infrastructure



Automation

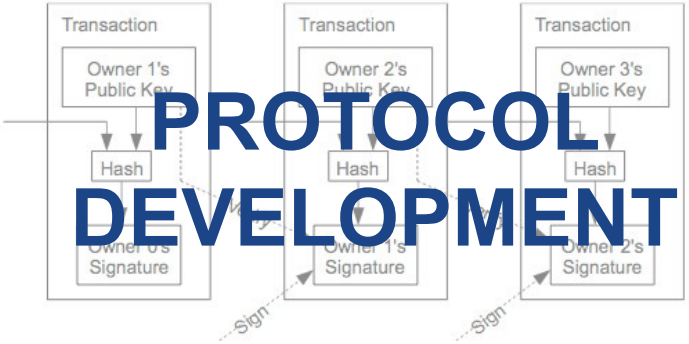
Cross Functional

DevOps Concentrations

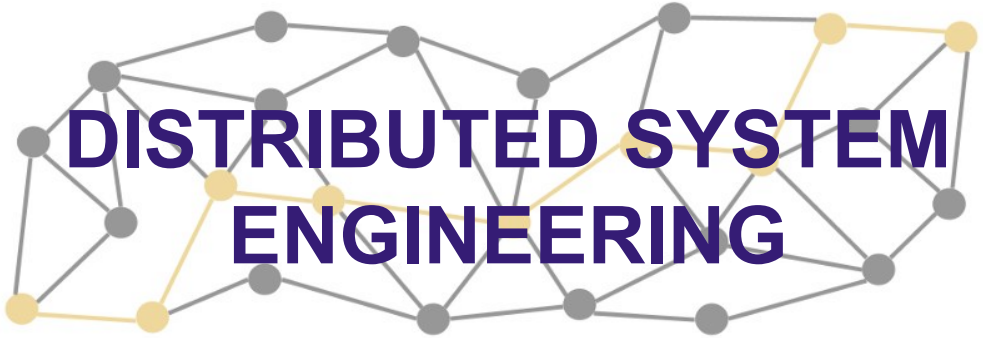


Who is looking for DevOps engineers?

What do Blockchain engineers do?

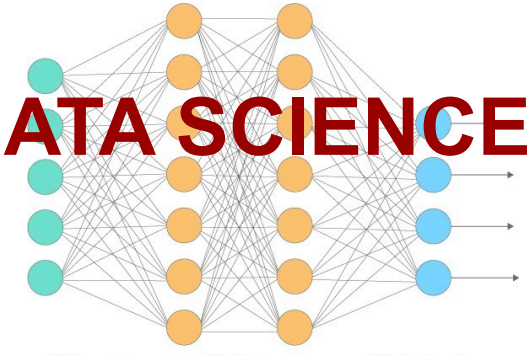


PROTOCOL DEVELOPMENT

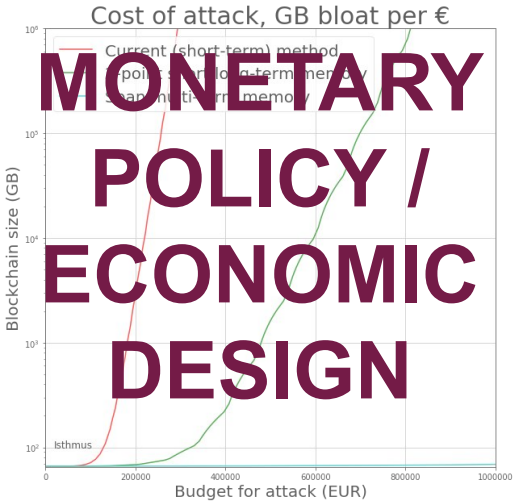


DISTRIBUTED SYSTEM ENGINEERING

TRUSTLESS PLATFORMS



DATA SCIENCE



MONETARY POLICY / ECONOMIC DESIGN

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.

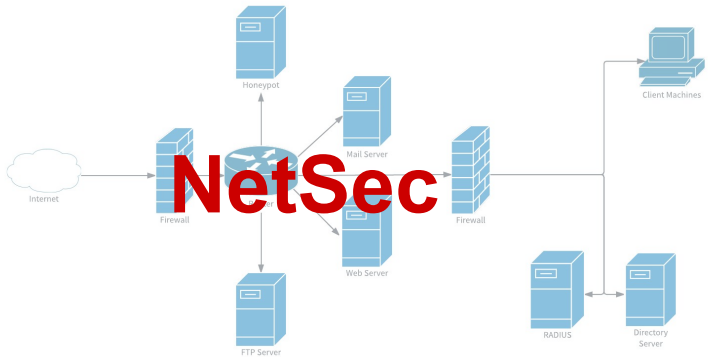
The blockchain + dApp stack

Who is looking for blockchain engineers?

What do Security engineers do?

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

AppSec



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
  - Terraform
  - Ansible
  - Jenkins
  - Docker
  - Yaml

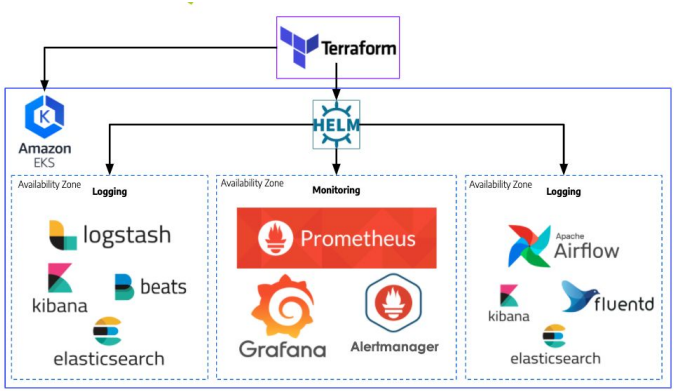
- Showcase coding and documentation skills with a **strong GitHub portfolio**

Building a strong portfolio

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

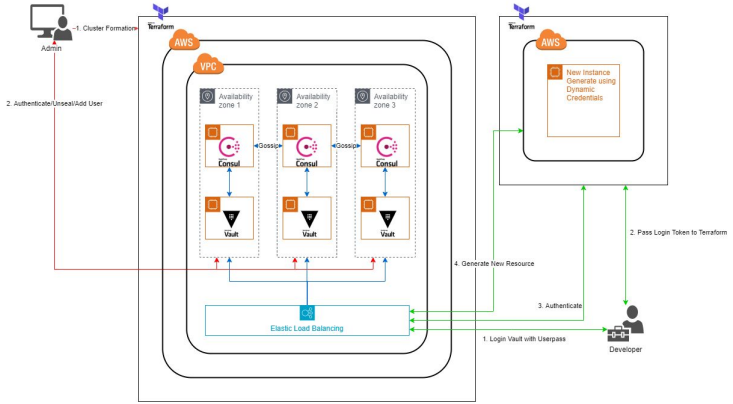
Terrastax
Qaif Shaikh

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



Securitas
Aditya Munot

Terraform module for secretes 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**

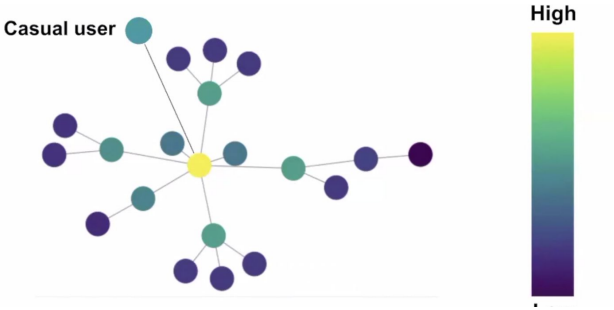
Building a strong portfolio

- 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.

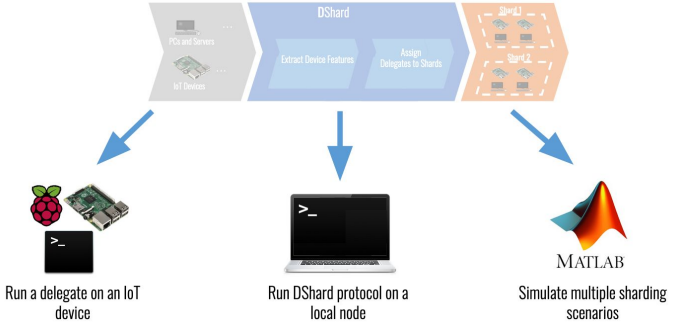


fellows.link/darius

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**
  - **Rust**
  - **Javascript**
  - C++
  - Python
  - Java

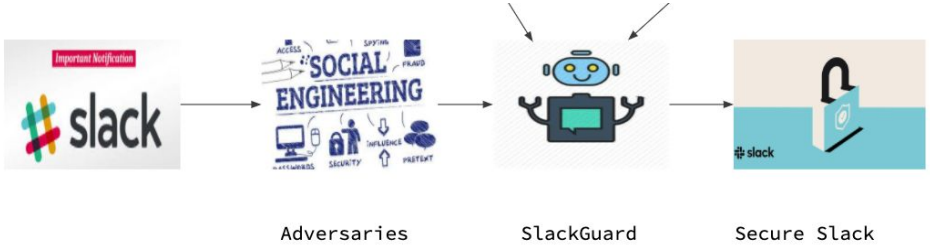
- Showcase coding and documentation skills with a **strong GitHub portfolio**

Building a strong portfolio

- Break systems
- Build applications and platforms

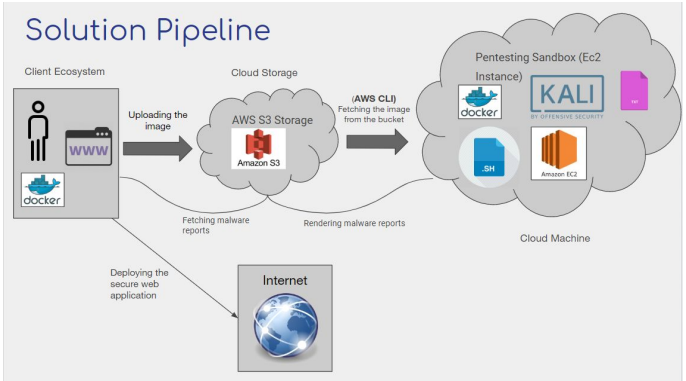
SlackGuard
Aashray Aggarwal

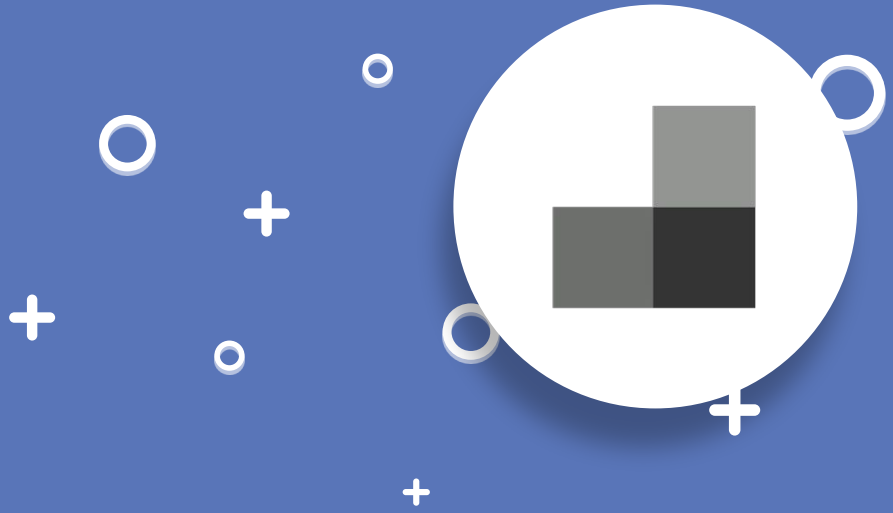
Security bot for Slack



Secure PenBox
Shasheen Bandodkar

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





Overview of Insight Fellows Program

Insight Programs

INSIGHT

DATA SCIENCE

DATA ENGINEERING

HEALTH DATA SCIENCE

ARTIFICIAL INTELLIGENCE

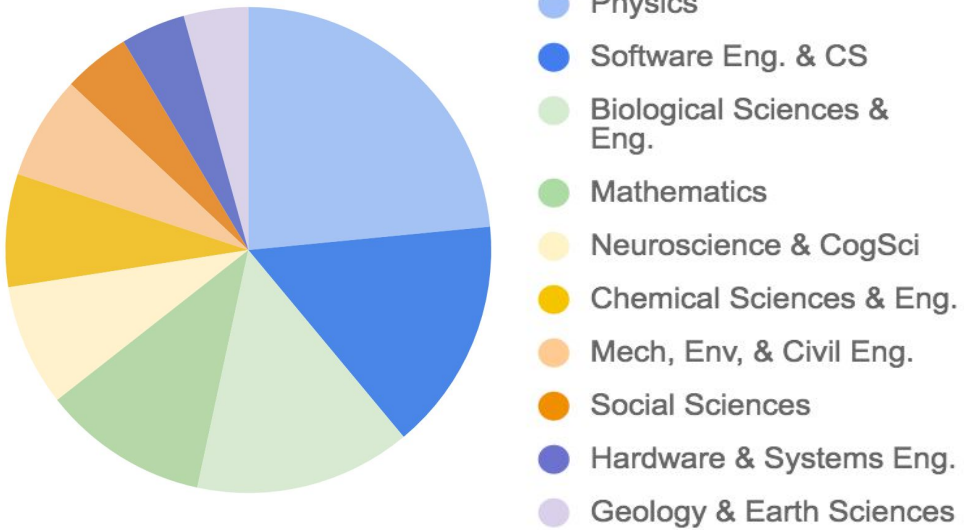
DEVOPS ENGINEERING

DECENTRALIZED CONSENSUS

SECURITY

- Full-Time Programs
- Fully Remote Sessions
- Applicant Mentorship Available
- Scholarships Available
- No educational requirements for 5 of the 7 programs
- Fellows come from academia AND industry

Fellows come from a range of backgrounds:



Diversity, Equity, and Inclusion at Insight

INSIGHT

Insight is committed to improving access to opportunities for traditionally underrepresented groups in tech. In addition to interventions to improve access to the Fellows Program, we're also working to provide an equitable experience where all Fellows feel a sense of belonging in the Insight Community. Here are a few ways we're making it happen:

Admissions

- Insight candidate mentorship program for underrepresented groups
- Insight & partner company sponsored scholarships available
- Learn more at: insightfellows.com/scholarships

Fellows Program

- DEI Summit, with lightning talks, panel discussions, and keynote speaker
- Data ethics & bias training
- Team dedicated to initiatives that improve the Fellow experience

...And Beyond

- Insight alumni provide mentorship to incoming Fellows
- Affinity groups to continue supporting the alumni community

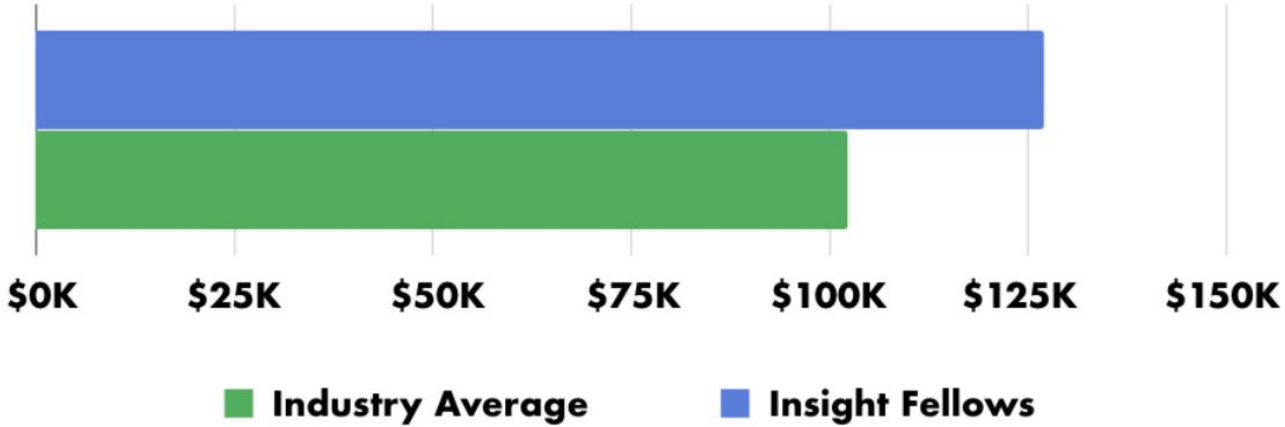
What Sets Insight Apart

INSIGHT

Fellow Outcomes

Fellows earn 24% more than industry standards

Average Starting Base Salary



In addition to an average base salary of $127,363, Fellows receive an average bonus of $11,200.

Source: Data reported from Fellows that completed Insight 2017-2019, compared to corresponding market data reported on Glassdoor in May 2020.

What Sets Insight Apart

Fellows join top companies in advanced roles

Number of Insight Fellows who have joined each of our top 20 hiring companies

facebook	wayfair	Apple	amazon	Vanguard
107	51	50	48	38
Google	Microsoft	CVS Health	Capital One	LinkedIn
33	33	32	30	30
Yelp	intuit	nielsen	Uber	STITCH FIX
30	26	24	24	19
Square	Bloomberg	IBM	Netflix	macy's
18	16	16	15	15

OVER 700 COMPANIES

What makes up the Fellows Program

INSIGHT

Project-based Learning

WHY

- Show teams your full potential

WHAT

- Learn skills in a cutting-edge area
- Build your portfolio with highly-demanded technologies

HOW

- Actively learn by building
- Gain hands on experience with guidance from industry experts

What makes up the Fellows Program

INSIGHT

Company Visits & Demos

WHY

- Meet the team members you'd work with
- Present to the teams that fit you

WHAT

- Over 38% of demos lead to an interview
- **3x higher for Fellows** than traditional applications *

HOW

- Get your foot in the door with the hiring manager
- Guidance on presenting to hiring managers, and prep for each company

* Source: Jobvite 2019 Recruiting Funnel Benchmark Report

What makes up the Fellows Program

INSIGHT

Interview Preparation & Coaching

WHY

- Interviews naturally have noise
- Interviews require deliberate and customized practice

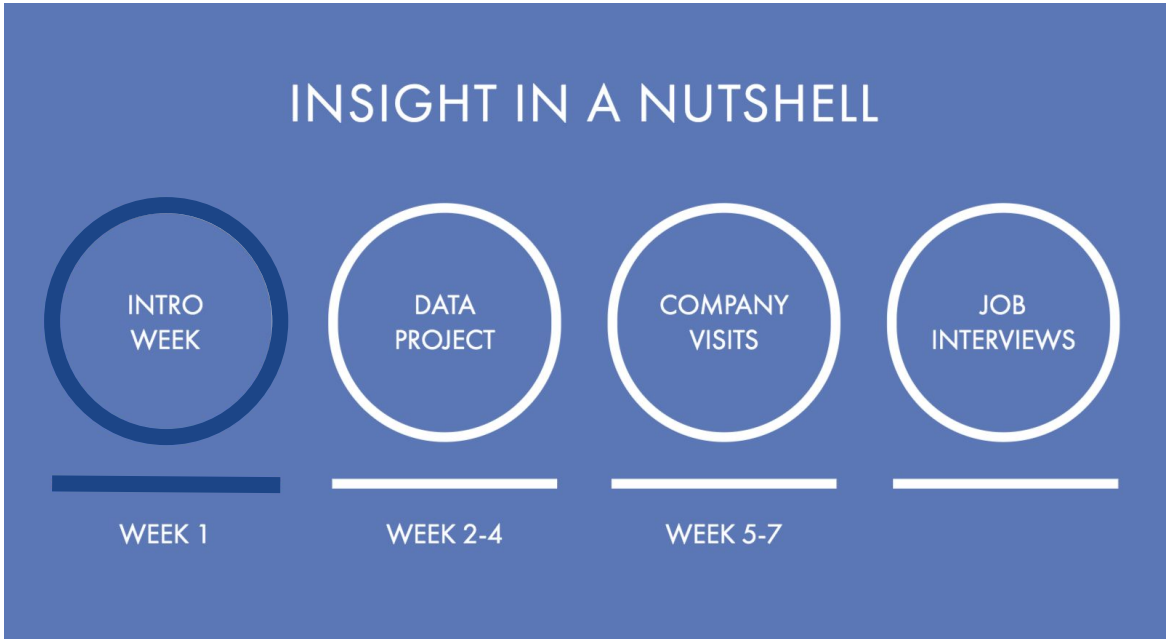
WHAT

- Insight Fellows **get jobs 40% faster** with personalized support, with up to **24% higher salaries** than comparable professionals

HOW

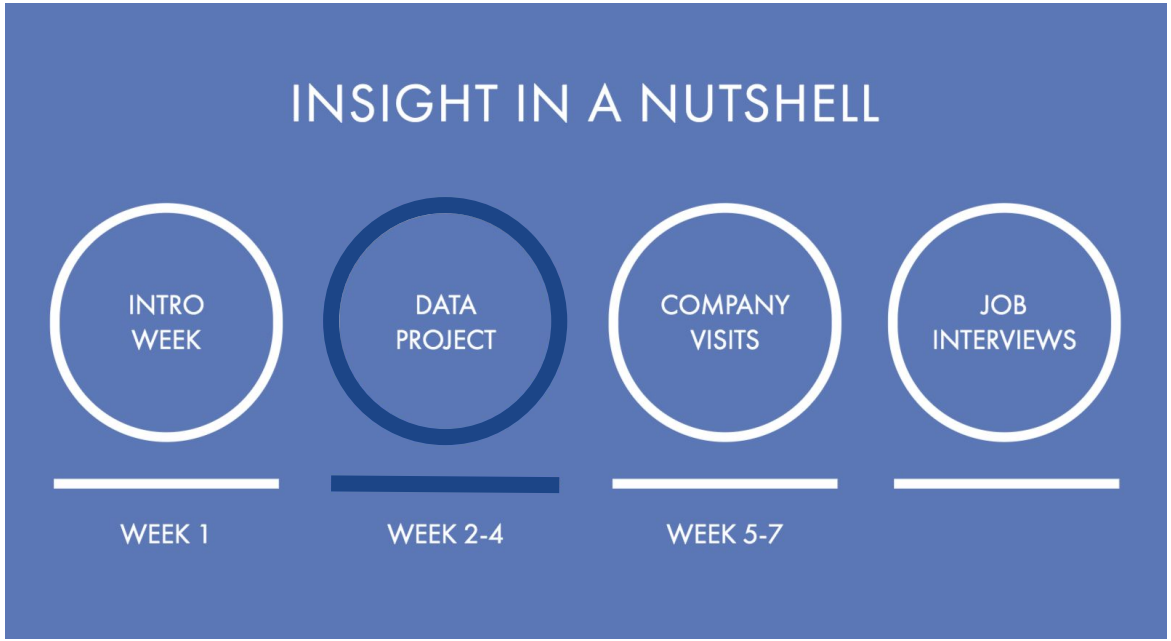
- Personalized preparation for your interviews
- One-on-one mock interviews for each company to help you show the relevant skills
- Negotiation support for offers

Structure of the Program: Week 1



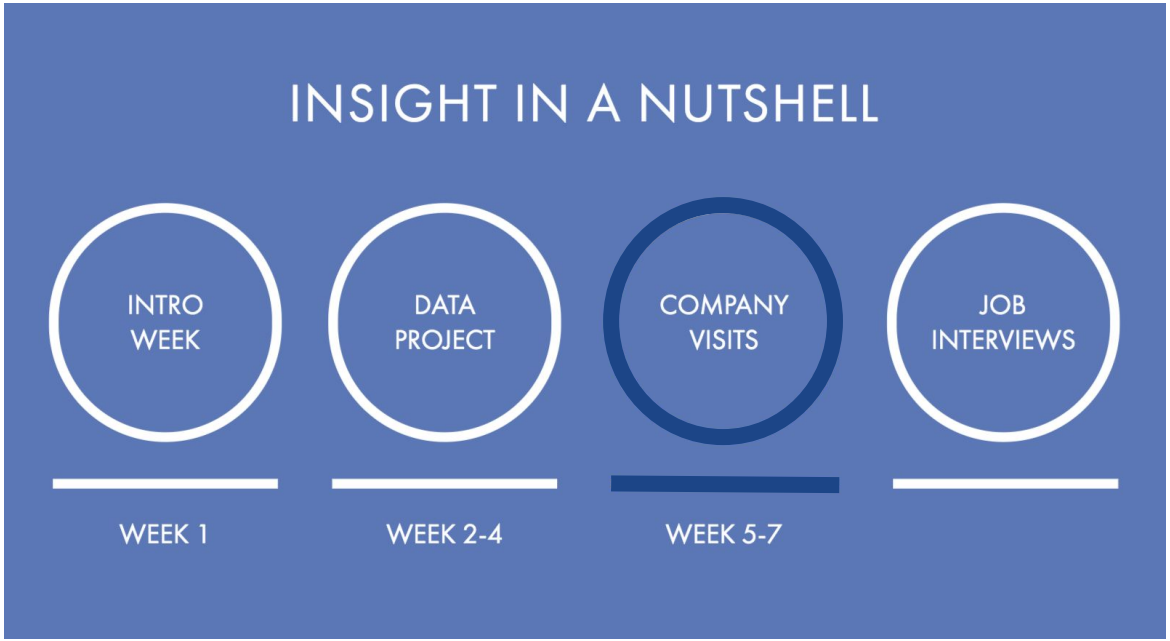
- Introduction to program and high-level concepts in the field
- Select a project and set up cloud computing environment

Structure of the Program: Weeks 2-4



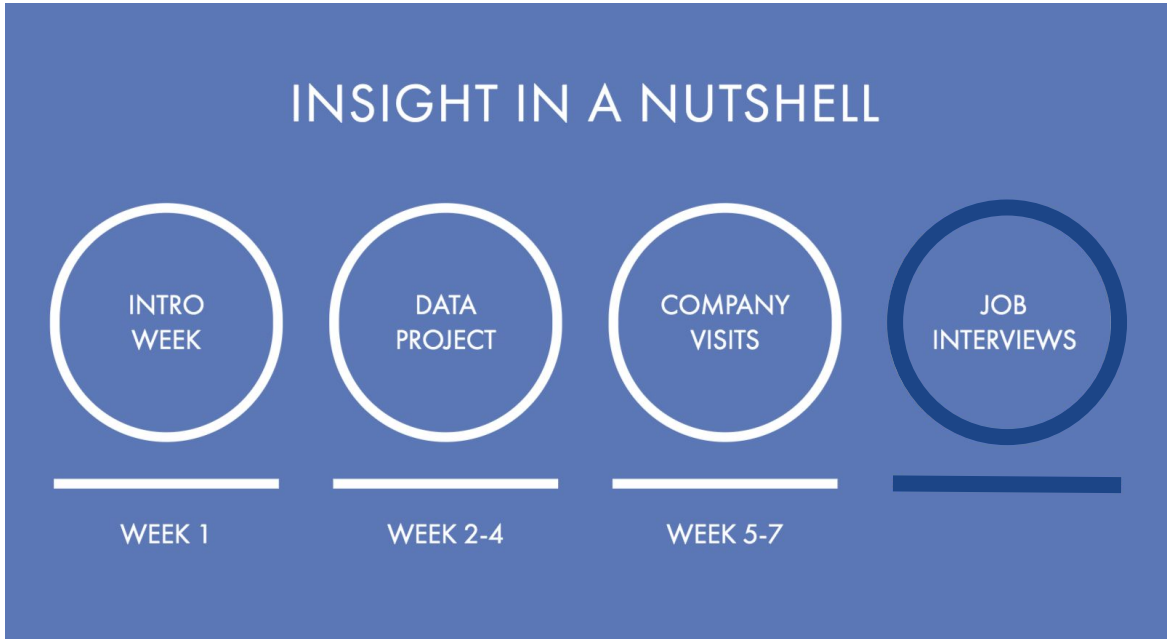
- Fellows work on their projects
- Hiring managers from Insight's partner companies visit and meet with Fellows, chat about team, culture, values, open roles, desired skills and experiences

Structure of the Program: Weeks 5-7



- Present completed projects to hiring companies
- Mock interviews and help each other prepare for interviews.

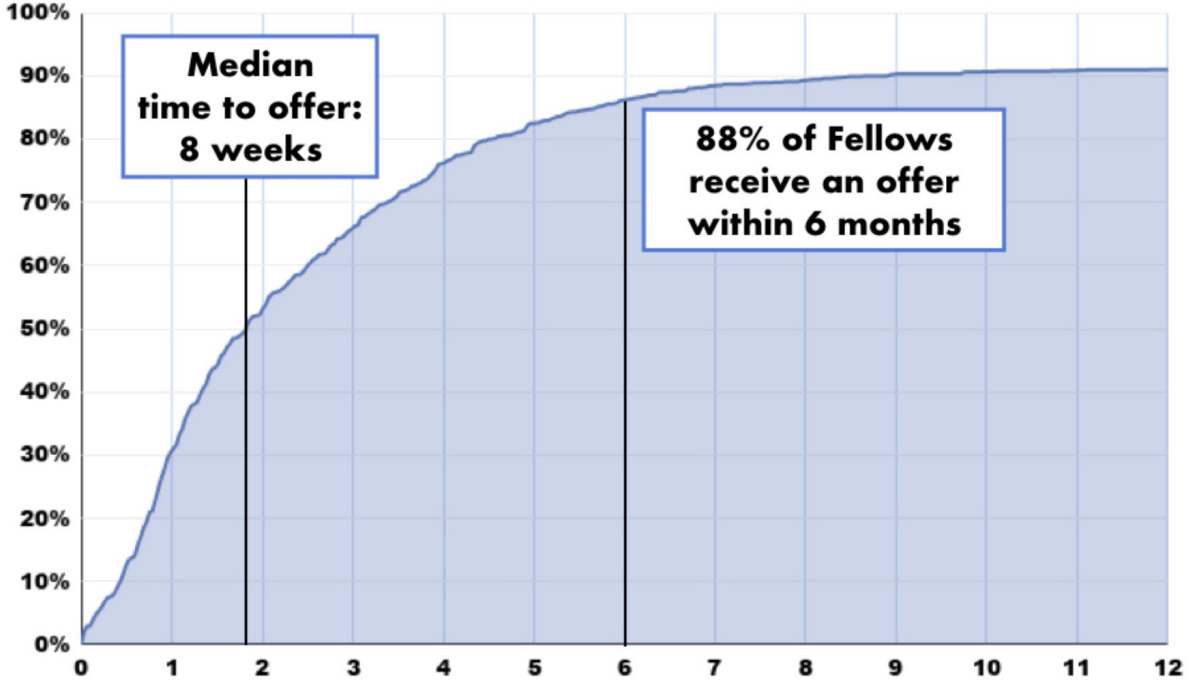
Structure of the Program: Weeks 8+



- Begin interviewing with companies, with personalized preparation
- Introductions to new companies continue through demos and resumes

Structure of the Program: Receiving offers

Percent of Fellows that receive offer in relevant field



Source: Date of accepted offer reported by Fellows that joined Insight during 2017-2019

Pay-it-Forward Network

INSIGHT

3500+
DATA SCIENTISTS & ENGINEERS

Successful Fellows create a lifelong network

- Past Fellows mentor new Fellows, just as the previous Fellows did for them
- The Fellow community accelerates learning through participation on our exclusive knowledge platform
- Deferred membership dues enable the program for future Fellows

Insight Guarantee

When you become a Fellow, Insight makes a guarantee to you with three components:

$100K+ SALARY

You accept an offer for a position that earns at least $100,000 USD annually.

WITHIN 6 MONTHS

You accept an offer dated within 6 months of the end date of the 7-week training program.

IN A RELEVANT FIELD

You accept an offer within a field relevant to the programs offered by Insight.

Fellows receive the full membership benefits for the remainder of their careers, even if their financial commitment is waived as a result of the guarantee not being satisfied.

Upcoming Application Deadline

To apply, visit:
apply.insightfellows.com

Next application deadline:
Monday, October 12

Next session begins:
Tuesday, January 19, 2021

Want to learn more?

Visit: insightfellows.com

Questions?

Email us at: info@insightfellows.com