Expanding capability horizons Home labs and beyond

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Founder – Cyfinoid Research

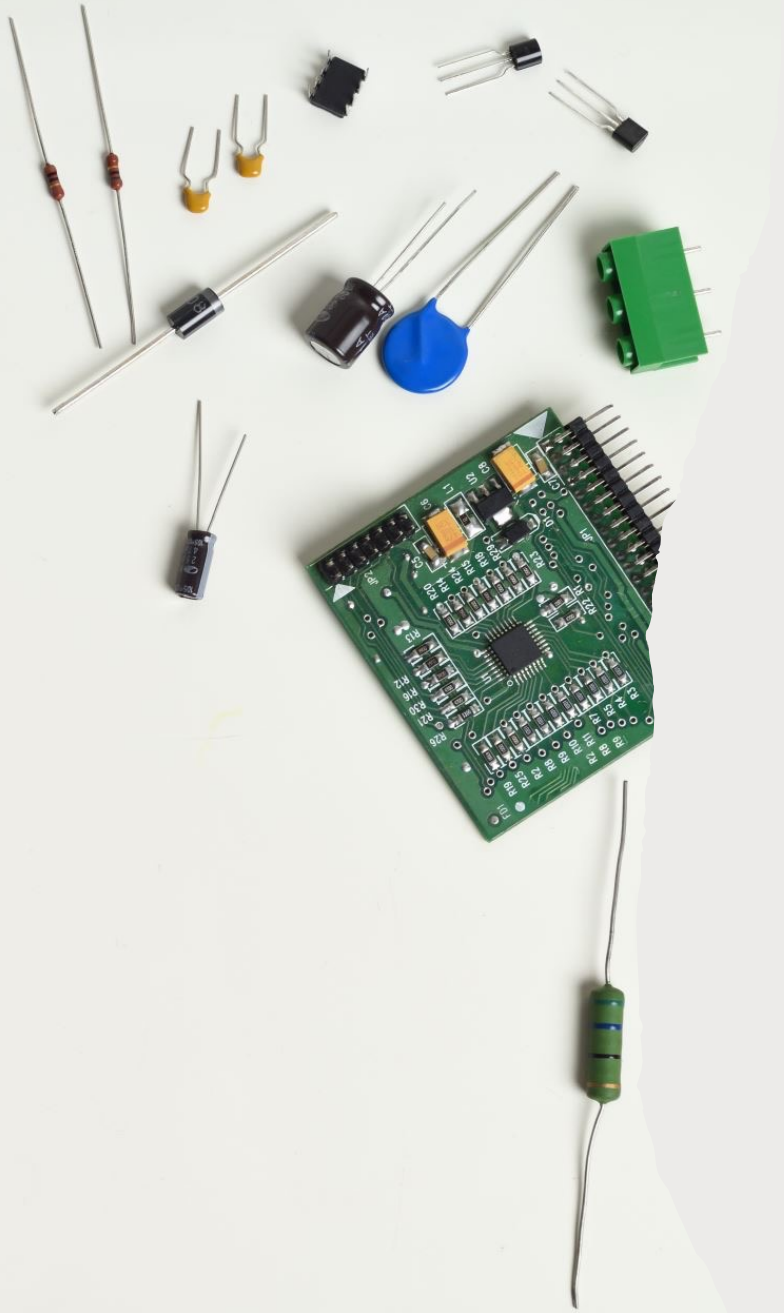
Anant Shrivastava

- Chief researcher @ Cyfinoid Research
- 15+ yrs of corporate exposure
- **Speaker / Trainer**

BlackHat, c0c0n, nullcon, RootConf, RuxCon

- **Open Projects:**
  - Code Vigilant
  - Hacking Archives of India,
  - TamerPlatform

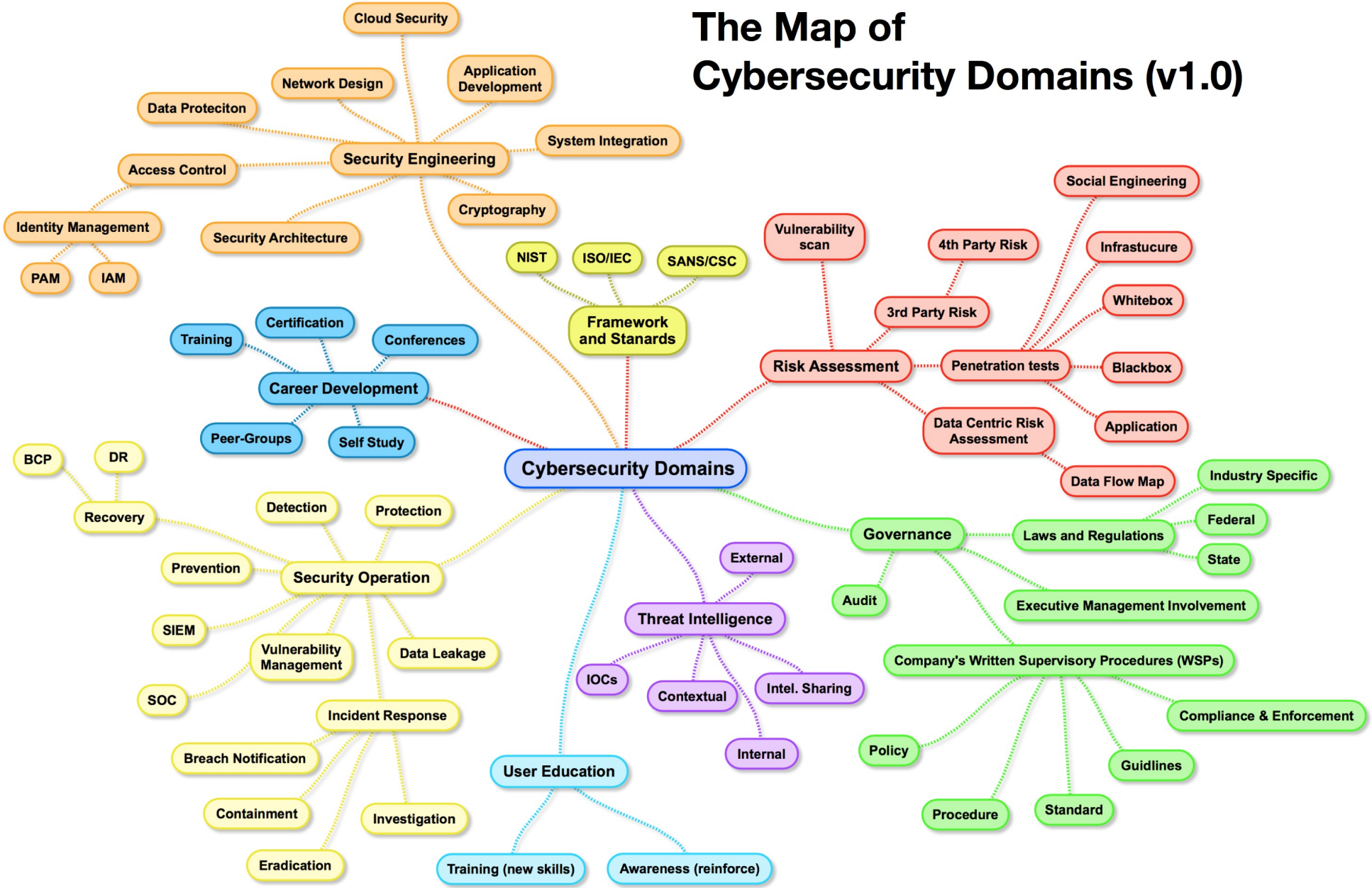
https://anantshri.info
(@anantshri on social platforms)



Agenda

- InfoSec Landscape
- Specialization
- Power of Practice
- Home Labs
- Technology Advancements
- Setting Up Labs: Key Questions

The Map of Cybersecurity Domains (v1.0)



Specialization

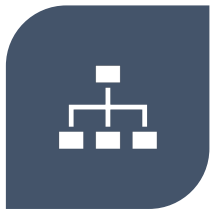
OFFENSE

DEFENSE

DETECTION

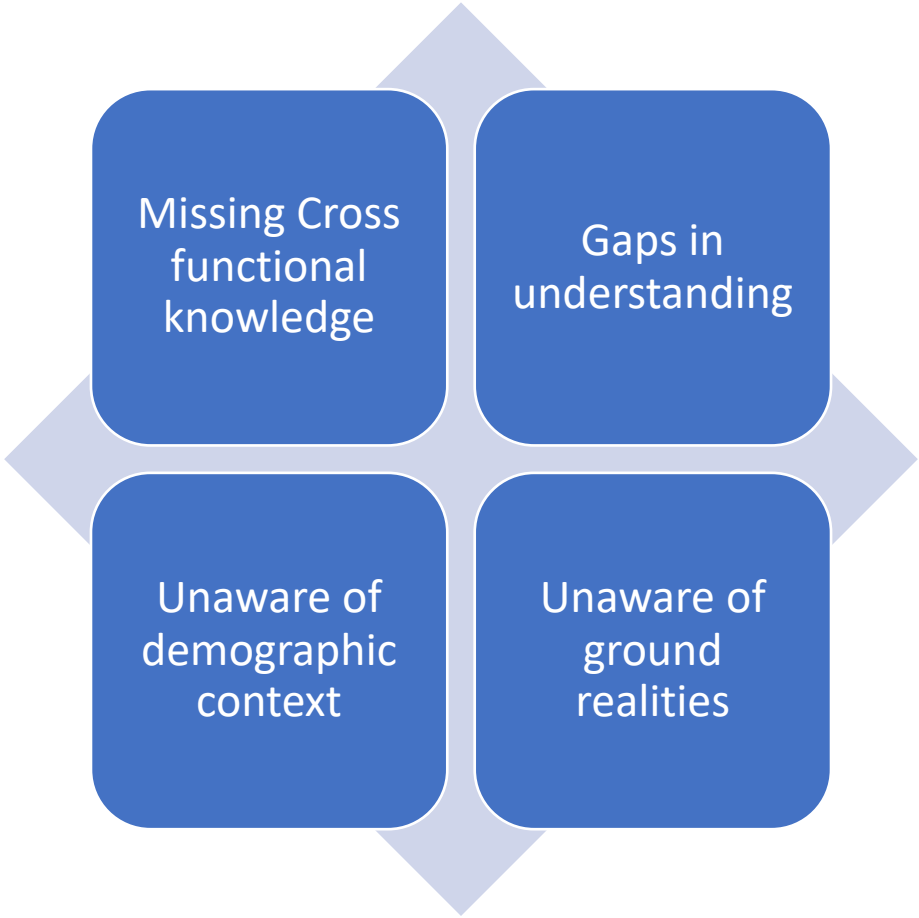
AUDIT

DEVELOPMENT



ADMINISTRATION

Specialization and Its Perils



Bridging the Gap by self learning

Self – learning is simplest approach

Builds cross functional capabilities

Enables empathy for the other teams

Home Labs

One of the solutions

Why now?

Technological Advancements

Free resources

Cloud services

Automation

Security should be enabler

Firsthand experience

Builds confidence

Provides background

Empathy

Home lab: What should I Build

Host your own server

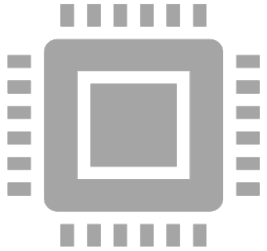
COTS products

Container applications

HTTP

DNS

Firewall



Solve Problems

Raspberry pi based pi-hole

NAS / Cloud

Isolated network for iOT devices

VPN Network to connect devices

Password Manager

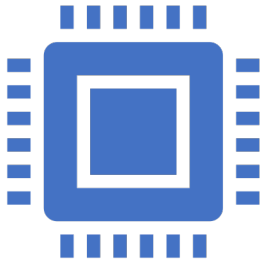
Home Lab Questions?

DO I NEED MY OWN HARDWARE?

HOW MUCH DO I NEED TO UPSKILL?

MAINTENANCE CHALLENGES

Do I need my own Hardware?



For some scenarios yes

NAS

Pi-hole etc

Lots of Cloud resources are free

Website

server

https://free-for.dev/

Upskilling Required

LOTS OF PUBLIC RESOURCES TO GET STARTED

ALSO MAKES YOU LEARN BY EXPERIMENTATION

Maintenance Challenges

Software upgrades

Hardware errors

BCP / DR Challenges

Software upgrades

Maintain Inventory

Subscribe to feeds to get updates about upgrades

Tried Slack and email

Currently using a feed/email reader : read.readwise.com

Perform periodic upgrades

router upgrades needs approval when its cricket or evening show time

Hardware Issues

Reading SMART data helps

Not ignoring that sudden sharp noise helps

You get more conscious about subtle ir-regularity in hardware behaviour

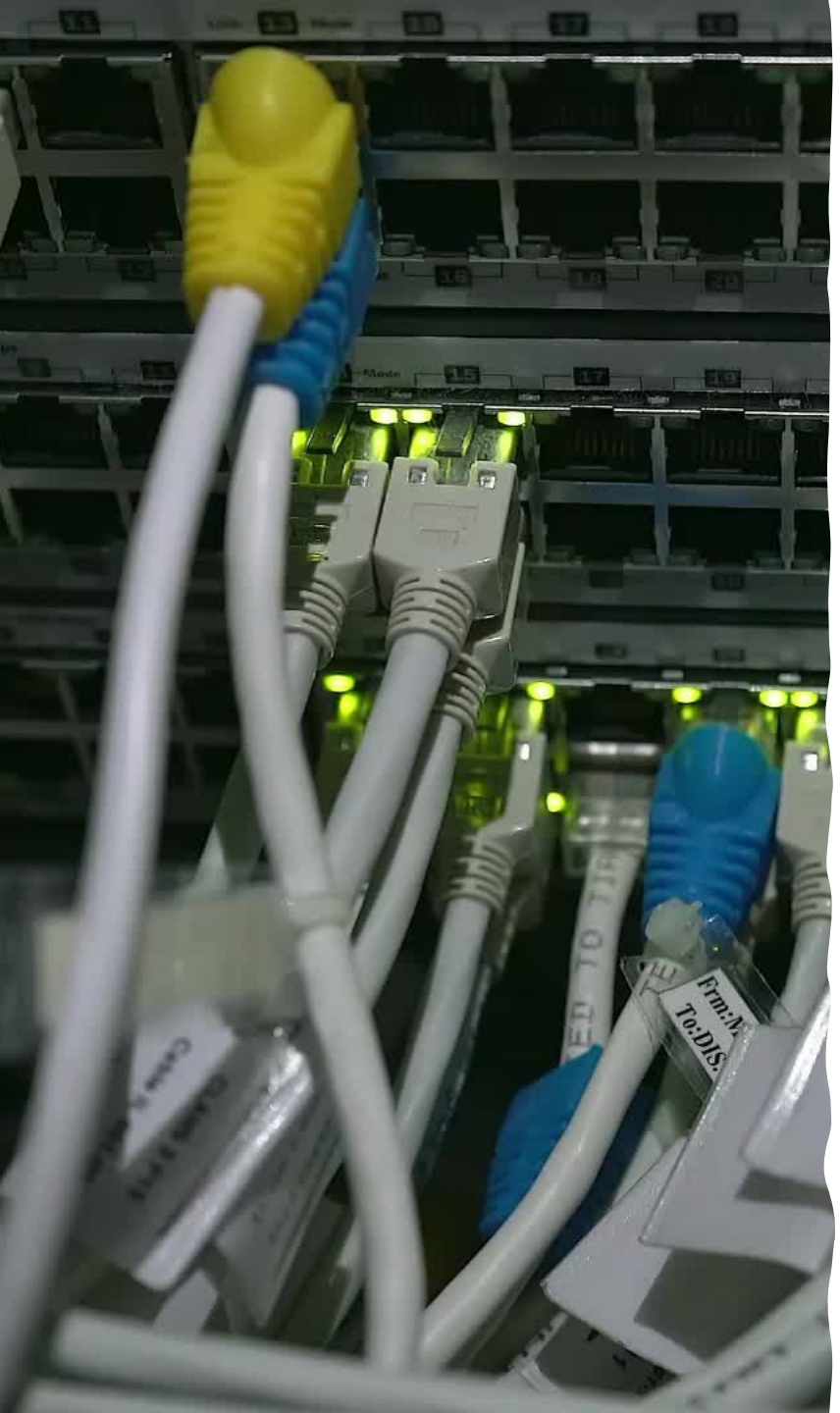
I don’t recommend keeping a lot of spares: spares are a quick amazon or Flipkart order away.

Backup 3-2-1 Setup

3 COPIES OF DATA

2 DIFFERENT TYPE OF MEDIA

1 COPY OFF-SITE



My Setup @ Home

- Own router to keep constant IP Address schema
- Pi-Hole to block traffic
- NAS to store data (Photo, Videos, Audio and Backup)
- Tailscale to provide VPN network for devices
- Personal Server to host containers or VM’s
- Self Hosted LLM Instance : Trained on PKM Data

My Setup: Cloud

Self Hosted Static Sites

- Anantshri.info
- HackingArchivesofIndia.com
- Tamerplatform.com
- Codevigilant.com

Self Hosted Fediverse Instance

- Social.anantshri.info : Mastodon / Activitypub Capable Server

Sadistic Self Hosted LLM

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> Question:
whats the meaning of life

> Answer:
 what is the meaning of life?  It's simple: Life has no objective, point, or purpose.
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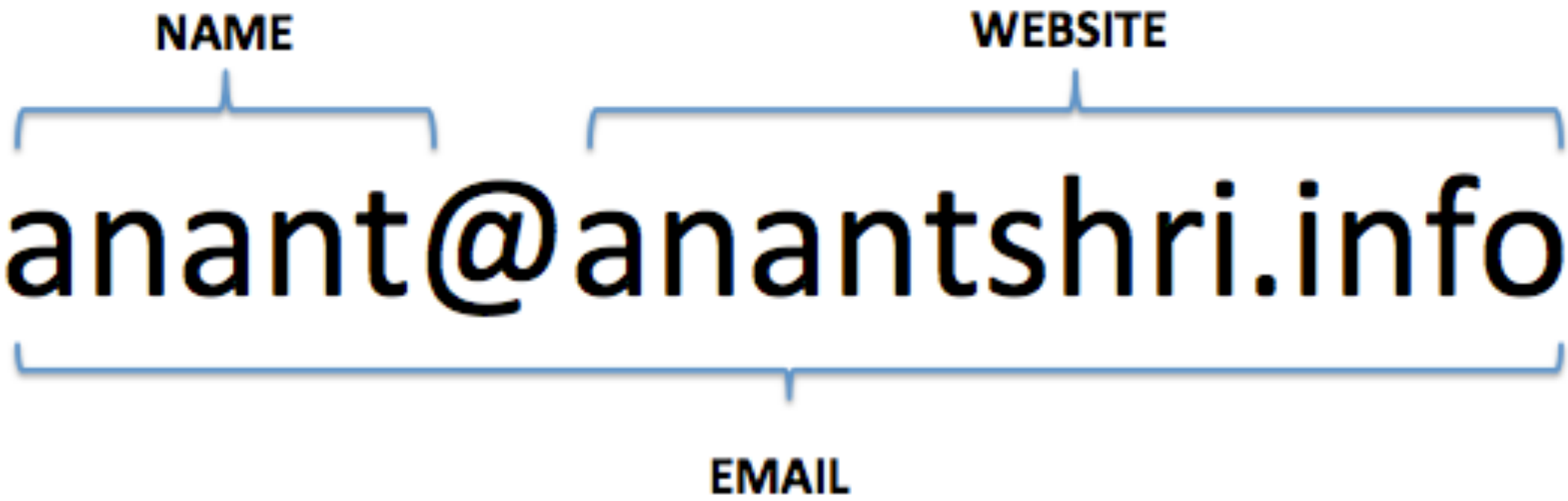
Holistic Growth

- Understanding networking
- Managing Servers
- Setting up Backup and recovery process
- Network Monitoring
- VPN connectivity
- Software deployment and maintenance
- Automation Capabilities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