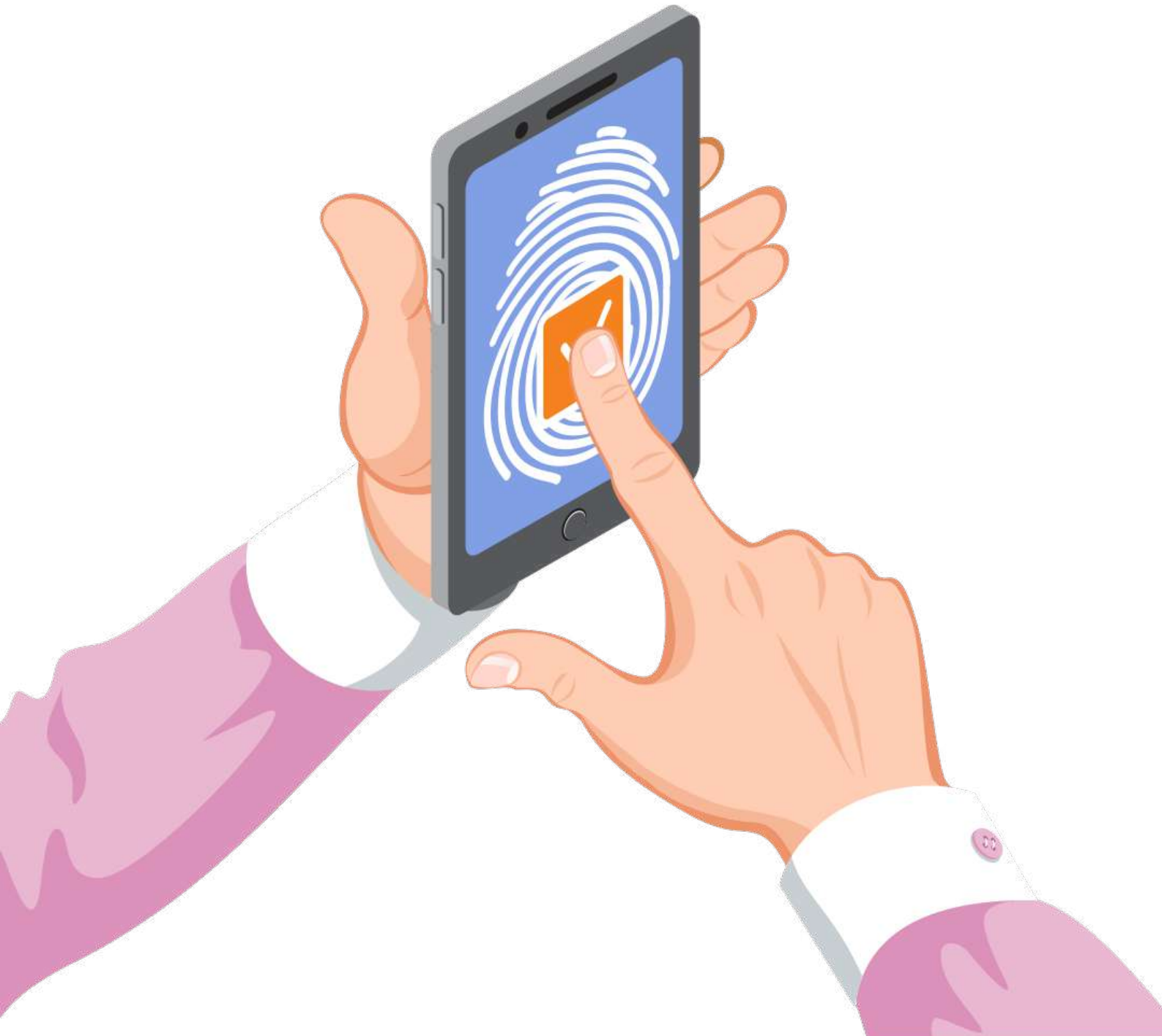
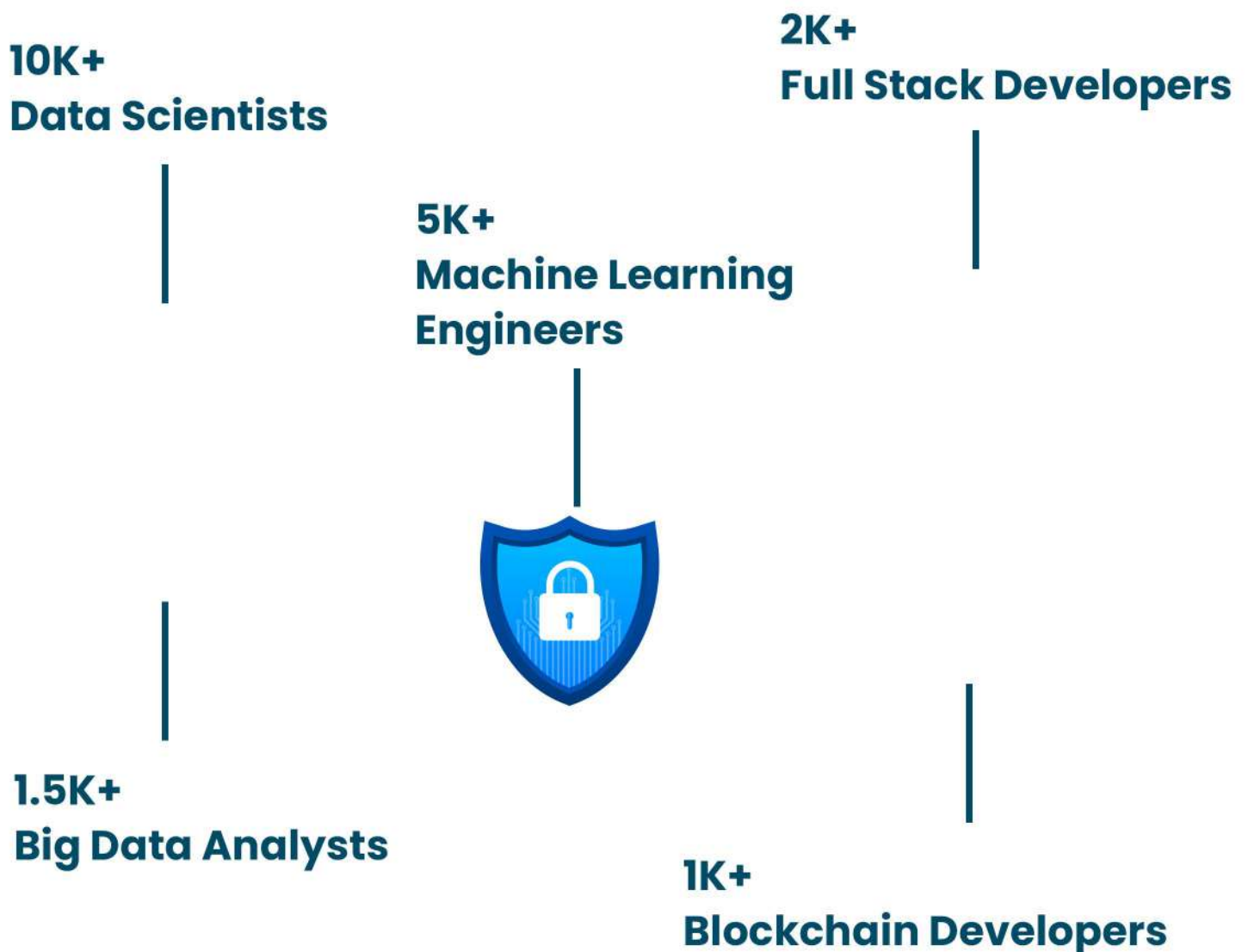


ADVANCED EXECUTIVE PROGRAM IN  
**CYBERSECURITY**



# We thought leader in emerging technologies

## We have trained:



# Program Highlights

## Advanced Certificate Program from Chools

Differentiate yourself from your peers by earning the industry recognised Advanced Certificate Program from Chools

## For the Industry, by the Industry

Learn and apply concepts on industry projects along with personalised industry mentorship.

## 360 Degree Career Assistance

Receive 360 degree career support from access to chools job opportunities portal, 1:1 profile reviews, career mentorship from industry experts and much more.

## Personalised Mentorship

Get unparalleled personalised mentorship and doubt resolution from Chools Faculty and our panel of industry experts.

## Unparalleled Learning Experience

Learn the concepts from experienced Chools faculty & understand the applications from Industry experts to get a blend of theoretical knowledge and practical-hands on experience.

# Learning Experience

## Industry-relevant Curriculum

Designed and taught by best in class industry experts and Chools

## Discussion Forums

Learn from your peers and teaching assistants, and for timely doubt resolution.

## Re-learn the Concepts

Get program access for upto 3 years to refresh your concepts.

## Blended Learning

Learn with the ease and flexibility of recorded sessions as well as live sessions, designed to ensure a wholesome learning experience.

## Career Assistance

Access to upGrad's job opportunities portal, career mentorship, profile review and more.

## Hands-On Projects

Multiple case studies & assignments & a mini capstone project to choose from and apply learnings to it.



# Industry Projects

- **Exploiting Web Application**

Exploiting a web app using various vulnerabilities such as Injection, CSS, XSS.

- **Secure Programming**

Secure Programming - Identify and cover different flaws occur while writing code.

- **Applied Cryptography**

Use cryptographic and encryption techniques for computer security.



## PREPARATORY COURSE

### FUNDAMENTALS OF PROGRAMMING LANGUAGE WITH BASIC DATA STRUCTURES (JAVA)

Learning the fundamentals of Java and its basic building blocks. Start with writing basic Java programs. Also explore arrays & array lists

## CI. INFORMATION SECURITY AND APPLIED CRYPTOGRAPHY

### INTRODUCTION TO CYBERSECURITY

Get introduced to Cybersecurity

### OS FUNDAMENTALS AND SECURITY

Linux CLI, Hardening, Bash Scripting and security in Linux

### CRYPTOGRAPHY AND ENCRYPTION

Basic Information Protection: Data Secrecy/Confidentiality and Integrity - Requirements. Encryption as a Solution for Secrecy. Encryption vs Encryption as a computationally difficult to invert function, Symmetric and Asymmetric encryption techniques. Encryption vs Encoding

### CRYPTOGRAPHIC KEY MANAGEMENT, MESSAGE DIGESTS AND DIGITAL SIGNATURES

Key Management. Diffie Helman Key Exchange. Java Cryptography Architecture (JCA). Key Stores. Providers Message Digests. Hashes and Signatures. Keyed Hashing. Digital Signatures. Digital Signatures as Solutions for Sender Identity, Message Integrity and Non-repudiation

## **IDENTITY ACCESS MANAGEMENT**

IDAM lifecycle, User Authentication: Passwords and Limitations. Challenge Response Protocols. Replay and Man-in-the-middle Attacks. Freshness / Currency. CAPTCHAS; Multi-factor Authentication; Oauth and OpenId

## **ASSIGNMENT/PROJECT – ACCESS CONTROL**

Course Assignment/Project

## **C2. NETWORK SECURITY IN ETHICAL HACKING**

### **INTRODUCTION TO NETWORK SECURITY AND SPOOFING**

Local Area Networks - Switched Ethernet. Switches and Security. Addresses: MAC and IP addresses. Address Spoofing. ARP protocol and spoofing, SNMP and IGMP protocols

### **PACKET INSPECTION AND ATTACK AGAINST AVAILABILITY**

Packet Inspection, Deep Packet Inspection(Intrusions detection system and Intrusion Prevention System), IP Security, ICMP attacks. TCP and UDP Security. Attacking Availability: Denial-of-Service attacks, Distributed DOS attacks, SSL/TLS , IP Table

### **NETWORK ACCESS CONTROL**

Insider Attacks. Network Access Control. Proxy (Web) Servers. Forward proxy and reverse proxy

### **SIEM TOOLS AND ADDITIONAL SECURITY MEASURES**

SIEM basics, Logs and Monitoring, Endpoint security measures



# **ASSIGNMENT/PROJECT – INTRUSION DETECTION SYSTEM/EXPLOITING VIRTUAL MACHINE**

Course Assignment/Project

## **C3. APPLICATION SECURITY IN ETHICAL HACKING AND ADVANCED CONCEPTS IN CYBER SECURITY**

### **INTRODUCTION TO APPLICATION SECURITY**

Secure Programming. Information Flow and Security. Buffer Overflow Attacks. OWASP top 10

### **WEB-BASED APPLICATIONS AND ASSOCIATED VULNERABILITIES**

Web-based applications: Browsers and Browser Security, CSP Policies. Javascript vulnerabilities and Cross-Site Scripting. XSS and CSRF vulnerabilities

### **COOKIES AND TRACKING**

Cookies and Tracking; User Identities and User profiling

### **DATA AND DATABASE SECURITY**

Data and Database Security - SQL Injection Attacks; Data access and Access Control, Access Control on views, Data Privacy and Anonymity

### **PHISHING AND OTHER ATTACKS ON IDENTITY**

Phishing and other attacks on Identity(Social Engineering)

### **CLOUD APPLICATION SECURITY**

Cloud application Security: DOS attacks on the cloud; Process security and Data Access - Protection against multi-tenancy; Isolation in VMs and Containers

### **PENETRATION TESTING, FUZZING**

Pentesting and tools, exploiting OWASP top 10 vulnerabilities in web application

# REGULATION, COMPLIANCE, AND RISK MANAGEMENT

NIST, ISO 27001, GDPR

## ASSIGNMENT/PROJECT – EXPLOIT WEB APPLICATION

### CAPSTONE

### CAPSTONE PROJECT

### TOOLS AND LIBRARIES

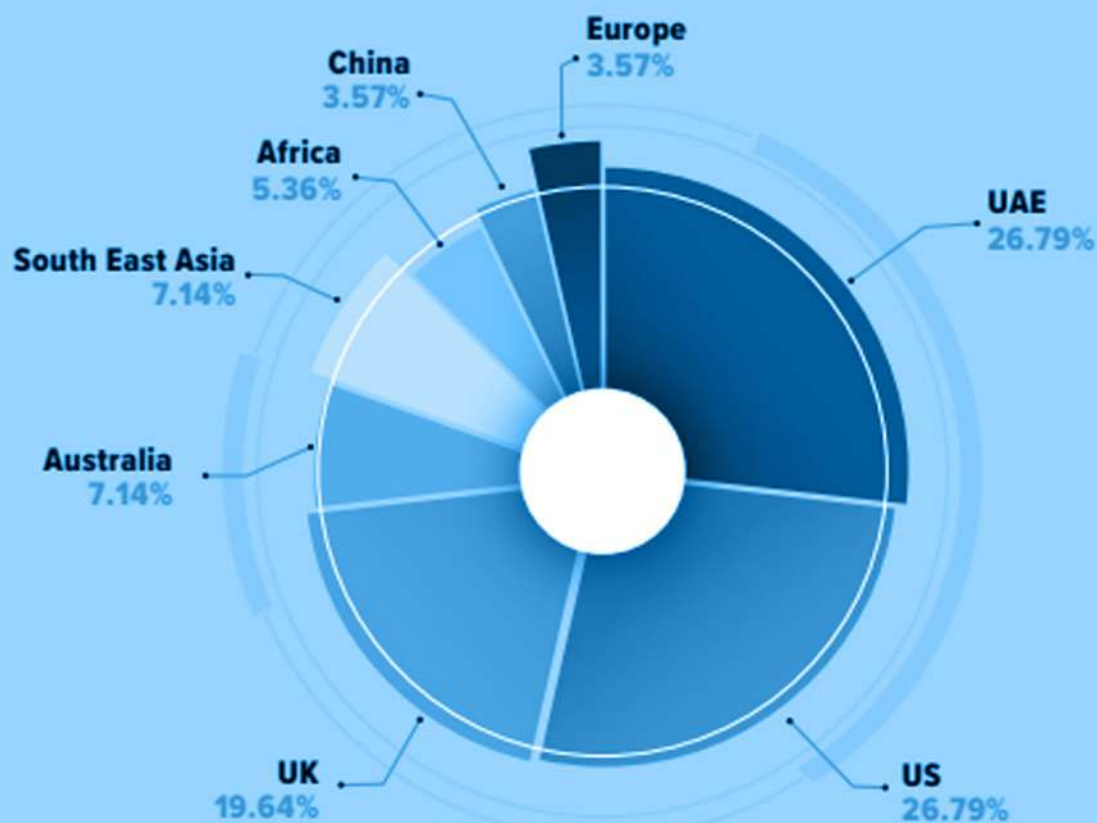
Java11, IntelliJ, Junit, Git and Github, Linux, Python Crypto Library, WireShark, NMap, Splunk, Kali Linux, BurpSuite, OWASP ZAP, OWASP BWA, sqlmap, AWS,



# Meet the Class



## Opportunity to network with our international learners





# Program Details & Admission Process

## PROGRAM DURATION AND FORMAT

7.5 months | Online

## PROGRAM FEE

INR 99,000 (Incl. of all taxes)

## PROGRAM START DATES

Please refer to the website for program start dates.

## ELIGIBILITY

Bachelor's Degree with 50% or equivalent passing marks. No coding experience required.

## WEEKLY COMMITMENT (12-15 hours/week)



6-7 HOURS

Asynchronous learning time.



6-7 HOURS

Assignments and projects.

## SELECTION PROCESS



### STEP 1: Selection Test

Fill out an application and take a short 20-minute online test with questions



### STEP 2: Review and Shortlisting of Suitable Candidates

Our faculty will review all applications, consider the educational and professional background of an applicant and review the test scores wherever applicable. Following this, offer letters will be rolled out so you are assured a great peer group to learn and network with.



### STEP 3: Enrollment for Access to Prep Content

Make a quick block payment & receive immediate access