

# PREETHAM ANANTHKUMAR

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## PROFILE

Preetham Ananthkumar is currently an undergraduate student in the University of Warwick working towards a degree in Cybersecurity. He has skills in programming, particularly in developing Android applications which involve both front-end and back-end development and game design. The recent experience as part of his course has also given him a solid understanding of the Unix environment, knowledge on operating system security, preliminary practical knowledge of networks, as well ethical hacking experience. Preetham has thorough communication, collaboration and problem-solving skills that would be beneficial in a team environment, supported by the many group and pair programming projects undertaken in his course.

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## EDUCATION

### Bachelor of Science in Cybersecurity

SEPT 2022 – NOW

University of Warwick

- Course modules: Software Development and Security, Operating Systems in the Cyber Context, Network Communications and Cyber Defence, Cyber Systems Architecture and Organisation, Cyber Fundamentals and Discrete Mathematics for Cyber Security.
- Participating in CTFs (Capture the Flag) competitions.
- Societies: Badminton, Calisthenics, Muay Thai, Tamil, Asian, Good Food

### A-Levels

SEPT 2020 – JUN 2022

Watford Grammar School for Boys

- Mathematics: A, Computer Science: A\*, Physics: B, EPQ: C
- Part of the Computing society, participated in the Computing Olympiad.

### GCSEs

SEPT 2015 – MAR 2020

The John Lyon School

- Mathematics: 9, English Literature: 7, English Language: 7, Biology: 9, Physics: 9, Chemistry: 6, Computer Science: 9, Spanish: 7, Geography: 7.
  - Clubs: Coding, Badminton, Volleyball, Christian Union, Carom, Japanese Culture.
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## WORK EXPERIENCE

### Technology Virtual Work Experience, Springpod

JULY 2022

- Gained a sound understanding of the inner-workings and concepts related to technology, especially in the IT security sector.
- Successfully apply learnt knowledge of the IT security sector through quizzes, interactive exercises and activities.
- Meaningful interaction with cybersecurity industry professionals through live webinars.
- Knowledge of key employability and transferable skills, as well as a sound awareness of employer expectations relating to cyber professions.

## Game Development, NOW TV Mobile Team, Sky UK

JUL 2018

- Paired with an experienced analyst of NOW TV's mobile team to learn more about agile software methodologies as well as Sky's security architecture.
- Participated in standup meetings and scrum ceremonies.
- Worked alongside senior software developers to develop a part of a gaming application for NOW TV.

## News Broadcasting, Sky News Academy, Sky UK

FEB 2017

- A basic orientation into the functionality of Sky News.
  - Gained an understanding of the architecture and organisation of Sky News.
  - Interacted with professional streaming technology and worked in a group to produce a news broadcasting based on current affairs.
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# PROJECTS

## Network Architecture

MAR 2023 – MAY 2023

Created a network infrastructure and topology for an example charity organisation as part of coursework:

- Created subnets using private ips and ensured communication between different machines on the different subnets.
- Configured and implemented switches, routers, and firewall rules to secure the network and prevent unauthorised access.
- Worked in a pair, demonstrating effective teamwork skills and software development methodologies throughout the project.
- Documented the entire process and progress in a report, highlighting the design choices and the technical details of the network implementation.
- Demonstrated a strong understanding of networking concepts and tools, including subnetting, routing and firewalls.

## CI/CD Pipeline Integration

JAN 2023 – APR 2023

Software development cloud computing project notes application with AWS and Docker as part of coursework:

- Developed a simple notes application that has the functionality to create and delete notes.
- Containerised the application using Docker for easy deployment and management.
- Utilised AWS resources including a VPC, EC2 instance, and ECR repository to host the application.
- Automated the entire process using a CI/CD pipeline through GitHub actions, ensuring seamless integration and deployment, as well as testing.
- Gained valuable experience in cloud computing, such as DevOps practices, and pair programming methodologies.
- Experience documenting findings and progress in a report.
- Demonstrated a strong understanding of modern development tools and technologies, including AWS, Docker, GitHub Actions, Node.js and Mocha testing framework.

## Penetration Testing

DEC 2022 – APR 2023

Penetration testing projects on both an assembly and a cloud server level:

- Conducted two coursework projects on penetration testing, demonstrating expertise in low-level assembly language and remote Linux server attacks
- In the first coursework, conducted penetration testing at a low level, including reverse engineering using GDB and examining register contents, setting breakpoints, and examining addresses to break into a system and find its password.

- In the second coursework, broke into a remote Linux server and gained root access by scanning the network with nmap, examining an FTP server, using Hydra brute-forcing along with word lists to find the password for a user on that FTP server, running LinPeas, and finally using a privilege escalation script.
- Ensured house cleaning by leaving no trace of the attack and recommended how to secure the server for future usage.
- Demonstrated proficiency in penetration testing tools, including GDB-peda, nmap, hydra, LinPeas, and privilege escalation scripts.
- Gained practical experience in penetration testing, security risks assessment, and vulnerability mitigation.
- Demonstrated strong written communication skills through the creation of detailed reports on the penetration testing projects.

## Malware Analysis Report

DEC 2022 – FEB 2023

Conducted a malware analysis report on a specific cyber attack called Hermetic Wiper as part of coursework:

- Detailed how the malware works, including its methods of infiltration, propagation, and execution on the system, as well as the extent of the damage it can cause.
- Analysed potential prevention measures that could be taken to mitigate the impact of the malware, including the use of antivirus software, network segmentation, and access control measures.
- Demonstrated expertise in malware analysis, including the ability to identify and analyse different types of malware and assess their potential impact on a system.
- Gained practical experience threat analysis, vulnerability assessment, and mitigation strategies.
- Demonstrated strong written communication skills through the creation of a detailed malware analysis report, highlighting the technical details of the attack and its impact, as well as recommended prevention measures.
- Developed an understanding of the importance of cybersecurity in modern society and the potential risks and impact of cyber attacks.

## Collaborative Music Listening Android App

FEB 2021 – MAR 2022

Computer Science A-Level NEA Programming Project

- Developed a solution to solve a real-world problem.
- Produced an official development documentation alongside the implementation of the code.
- Gathered evidence from potential stakeholders and formed a requirements specification.
- Used Android Studio to design the front end using XML and the back end in Kotlin.
- Played with integrating music streaming providers' APIs into the project, such as Spotify and Apple Music.
- Developed using the agile methodology, including interactive sprints and cards.
- Tested for function robustness and whether the proposed solution met the user requirements.

## Game Development

AUG 2019 – AUG 2020

- Used the Pygame module along with object orientated programming to create a recreation of the Asteroids game.
- Used a game engine and programming environment, Greenfoot, along with basic Java programming concepts to develop 2D graphical games.
- Used an external audio module to create a Python Music Player with reasonable functionality.

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## SKILLS

CI/CD pipeline, AWS cloud resources, Docker, Node.js, Penetration testing, Networking, Java, JavaScript, HTML, Python, Kotlin, Agile software methodologies, Mathematical skills, public speaking (from LAMDA), essay literacy skills, research skills, time management, decision making, problem-solving, critical-thinking, presentation skills, teamwork.

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