UWE Bristol | University of the West of England

# Cyber Resilience for SMEs

**Dr Thomas Win**
**Senior Lecturer in Cyber Security**

**Prof. Phil Legg**
**Professor in Cyber Security**
**Co-Director: UWEcyber**
**ACE-CSE**

2nd February 2023

UWE cyber Gold Award

in association with National Cyber Security Centre

Department for Digital, Culture, Media & Sport

Academic Centre of Excellence in **Cyber Security Education**

UWE cyber | UWE Bristol | University of the West of England

# Cyber Security at UWE

- NCSC Gold Academic Centre of Excellence in Cyber Security Education (ACE-CSE)
- NCSC-certified MSc Cyber Security
- NCSC-certified Cyber Security Technical Professional (Degree Apprenticeship)
- BSc Cyber Security and Digital Forensics

Gold Award

in association with National Cyber Security Centre

Department for Digital, Culture, Media & Sport

Academic Centre of Excellence in **Cyber Security Education**

- Regional: Outreach / Bootcamps / Workshops
- National: CISSEUK, ACE-CSE network

- Research: Partnership PhD Scheme
- Research: Cyber Security and Cyber Crime Cluster (CSC3)
- Research: NCSC / DSTL / EPSRC / industry funding opportunities

UWE cyber | UWE Bristol University of the West of England

# UWEcyber Research

**Software, Cloud and Infrastructure Security**

Container-based, Software Security, IoT, CAV, Hardware

**Cyber Security Data Analytics**

ML for Security, Security of ML, Explainable AI, Privacy, Transparency and Trust

**Cyber Crime and Domestic Cyber Security**

Online Harms, Forensic Analysis, Dark Web, Financial Crime

**Pedagogical Research for Cyber Security**

Effective interactive methods for teaching and learning

UWE cyber UWE Bristol University of the West of England

# Cyber Resilience for SMEs

# Setting the scene: Cyber and SMEs

- Cyberattacks have increased significantly in recent months
- According to Fundera[1], 424% increase in SME-targeted cyberattacks in 2022
- Means of cyberattacks range from DDoS to more sophisticated ransomware attacks
- According to the NCSC, the UK is the third most targeted country[2] behind the US and Ukraine

1. https://www.fundera.com/resources/small-business-cyber-security-statistics
2. https://www.ncsc.gov.uk/files/NCSC-Annual-Review-2022-executive-summary-web.pdf

# Cyber Resilience: Getting started

1. To kick us off, please share with us:

    i. What is your business and USP (Unique Selling Proposition)?

    ii. How is technology used in your business?

    iii. What are your concerns regarding cyberthreats and/or data security?

https://www.ncsc.gov.uk/cyberaware/actionplan

# Cyber Resilience: Getting started

1. Our analyses thus far have suggested that:
   i. Cybersecurity attacks have significantly increased
   ii. It is challenging for SMEs to adopt the same countermeasures as large organisations

2. Question then becomes: How do I get started with my Cyber Resilience?
3. To kick us off, let's look at the https://www.ncsc.gov.uk/collection/small-business-guide

4. Please create your Cyber Action Plan, using the NCSC's Cyber Aware Action Plan. Then discuss how we can apply them and the measures required.

https://www.ncsc.gov.uk/cyberaware/actionplan

# 5 Safes

1. **Safe data:** data is treated to protect any confidentiality concerns.
2. **Safe projects:** research projects are approved by data owners for the public good.
3. **Safe people:** researchers are trained and authorised to use data safely.
4. **Safe settings:** a SecureLab environment prevents unauthorised use.
5. **Safe outputs:** screened and approved outputs that are non-disclosive.

Watch the Video

https://ukdataservice.ac.uk/help/secure-lab/what-is-the-five-safes-framework/

https://youtu.be/Mln9T52mwj0

# Over to you: Royal Mail cyber attack

1. Recently Royal Mail has been subjected to a large-scale cyber attack

2. The article describing it can be found in the QR code here

3. Let's do a table-top dissection of it by looking at:
   i. What parallels can we find between this and the 2017 Wannacry cyberattack?

   ii. What lessons can we adapt from the Uber cyberattack?

   iii. What are the challenges that an SME would face in adopting them and how can they be addressed?

https://www.cshub.com/attacks/news/cyber-attack-against-royal-mail-linked-to-russian-hackers