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ROYAL HOLLOWAY UNIVERSITY OF LONDON

المركز الوطني للأمن السيبراني
National Cyber Security Center

cerc 2024

THE 6TH CYBERSECURITY EDUCATION & RESEARCH CONFERENCE

Enhancing Student Learning Journey through a Range of AI-Based Support Services

Fauzia Idrees Abro

Director for Distance Learning Programme in Cybersecurity

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كلية الكويت للعلوم والتكنولوجيا

جامعة الكويت
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125 عاماً من الشراكة الكويتية البريطانية
125 YEARS OF KUWAITI-BRITISH PARTNERSHIP

Royal Holloway, University of London

RHUL hosts the Information Security Group, one of the largest dedicated teaching and research groups in Cyber Security with over 90 PhD students

Founded in the 1990s, it is recognized as the Centre of Excellence in Information Security research, education, and expert advice

Received a Gold award recognizing excellence in Cyber Security education from the National Cyber Security Centre (NCSC)

We are also recognized as the Academic Centre of Excellence in Cyber Security Research

The Information Security Group (ISG) was awarded a Queen's Anniversary Prize in 1998

All our programmes are National Cyber Security Centre certified

We are also the founding member of the International Cyber Security Center of Excellence

We are members of the All-Party Parliamentary Group in Cyber Security and assist the Government in policy-making

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Sequence

AI for Academic Support Service	• Hands-on Learning • Teaching Assistant
AI for non-academic Support Services	• Financial Support • Mental Health Support
Privacy and Security Concerns	• Privacy • Regulatory Compliance • Ethical

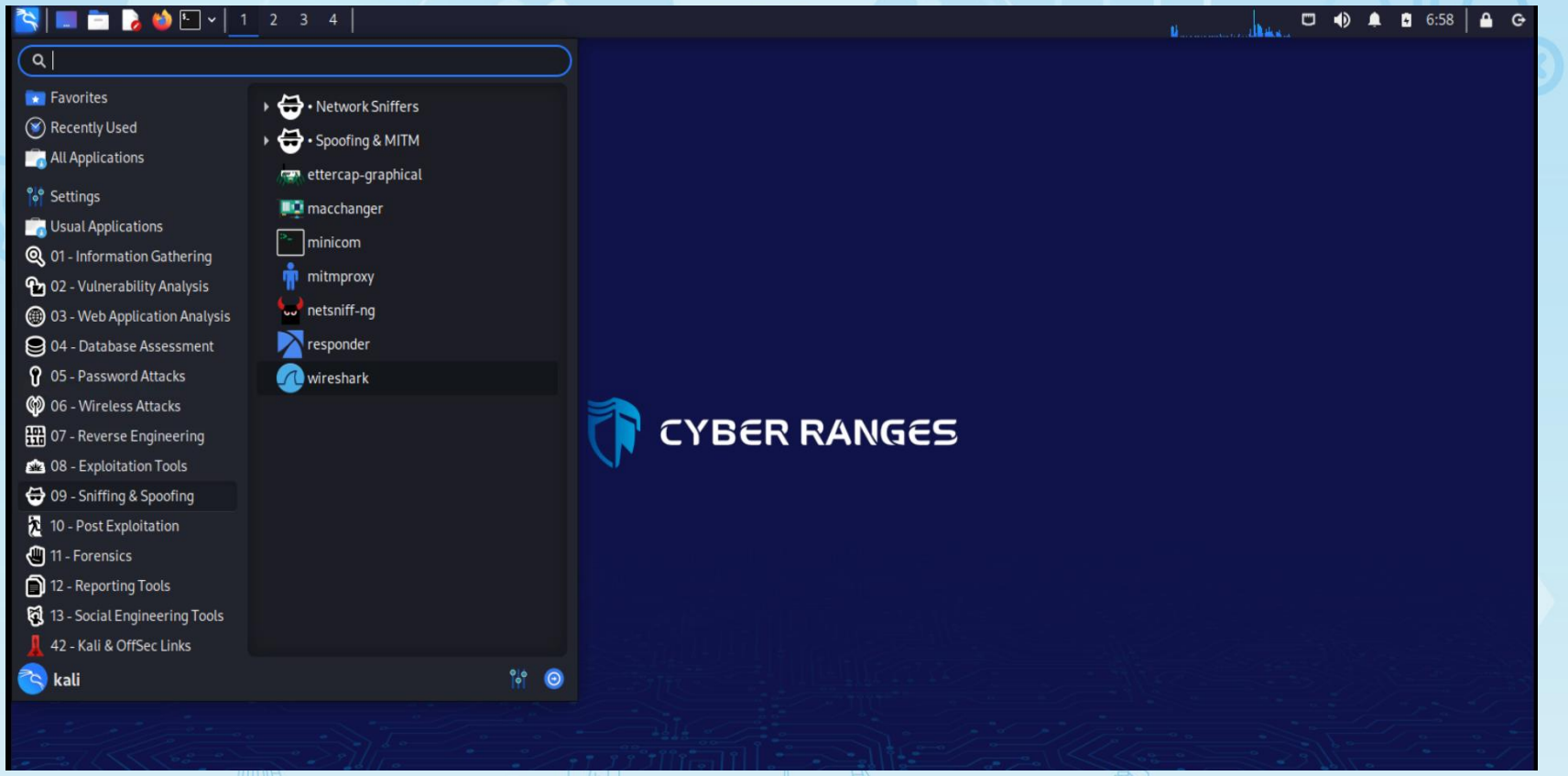
Introduction

- Intersection of AI, cybersecurity, and education to enhance student learning journeys
- AI-based support services can transform student experiences
- Data Processing and Predictive Analytics
  - Identify patterns related to academic struggles, financial issues, or mental health concerns
- AI-Driven Interventions
  - Implementing proactive support before challenges escalate

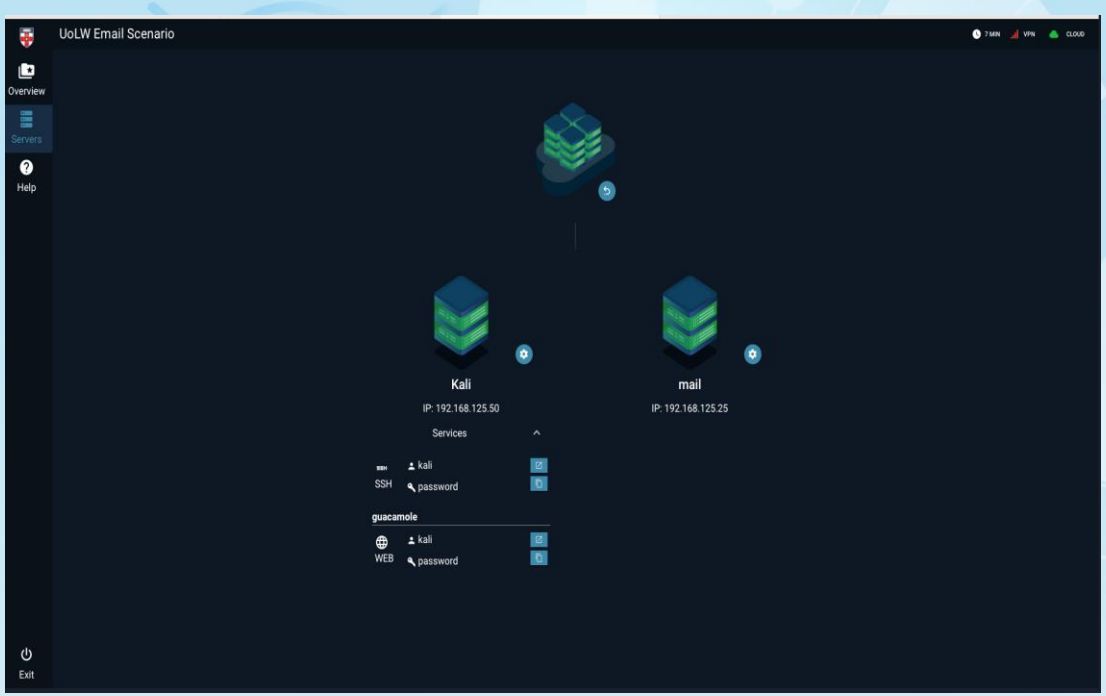
Academic Support: Cyber Security Education with AI

- Hands-on skill learning through cyber range
- Simulate cyberattack scenarios in an interactive, and isolated environment
- Experience in identifying and responding to cyber-attacks
- AI-assisted malware analysis
- Working collaboratively as a team beyond borders

Cyber Range Labs Setup



Cyber Range Labs Setup



Academic Support: AI Teaching Assistant

- Collaboration between UoL and the Noodle Factory
- AI Teaching Assistant evaluated on undergraduate and postgraduate programmes
- The University of London received the 2023 Gartner Eye on Innovation
- Integrated into the learning platform
- Provides real-time responses to academic questions based on course material
- Generates and mark formative assessments and test student knowledge
- Recommends lesson plans and educational content tailored to individual learning needs

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Noodle Factory Teaching Assistant

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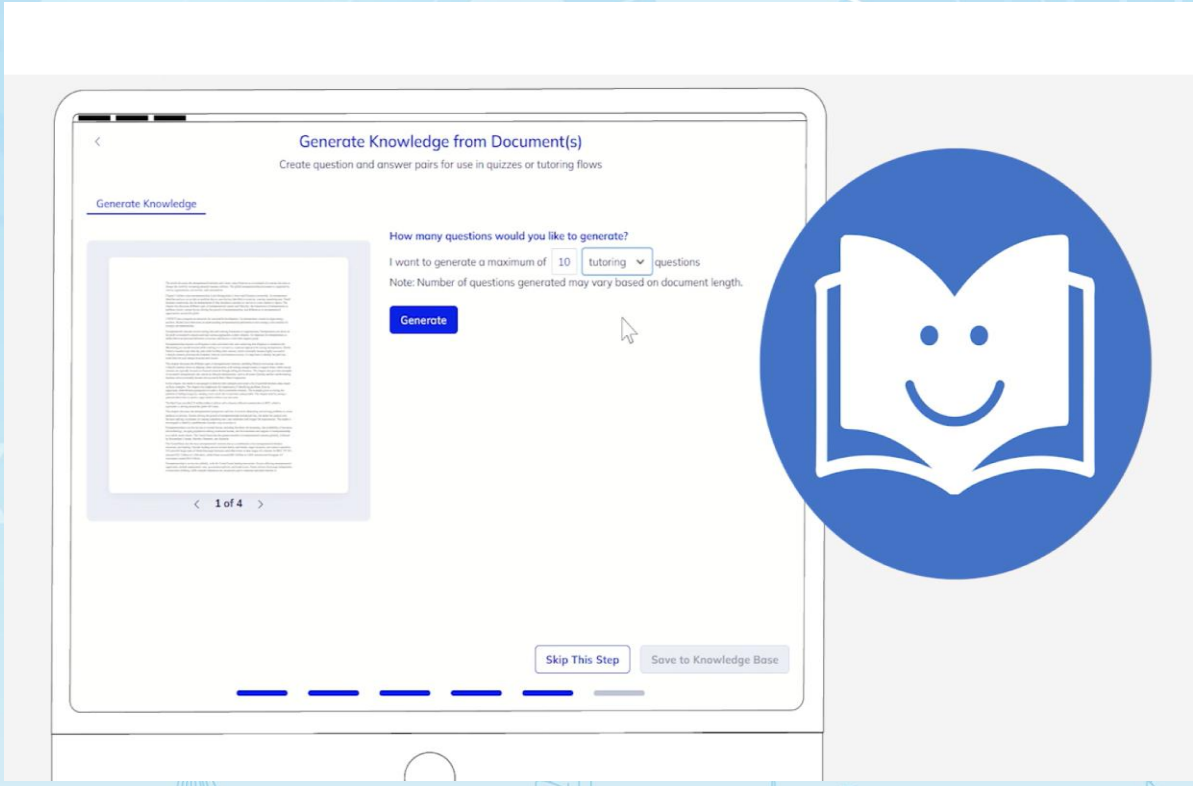

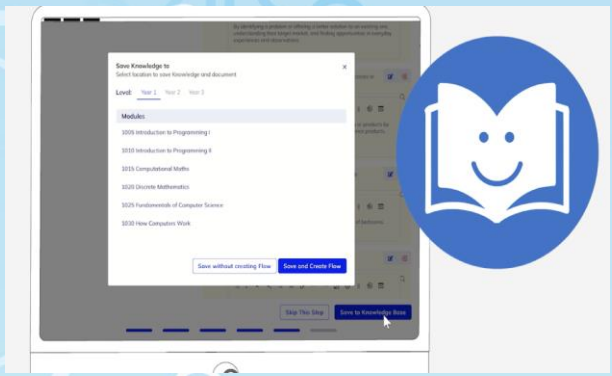

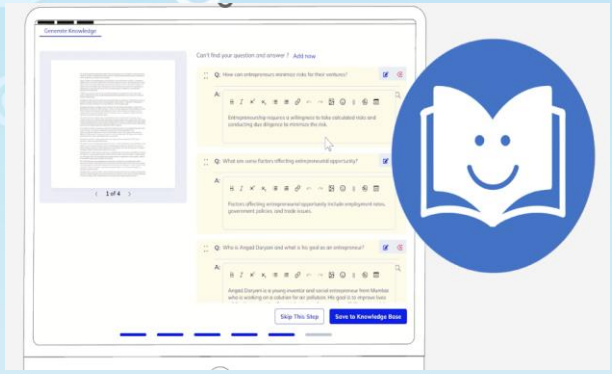

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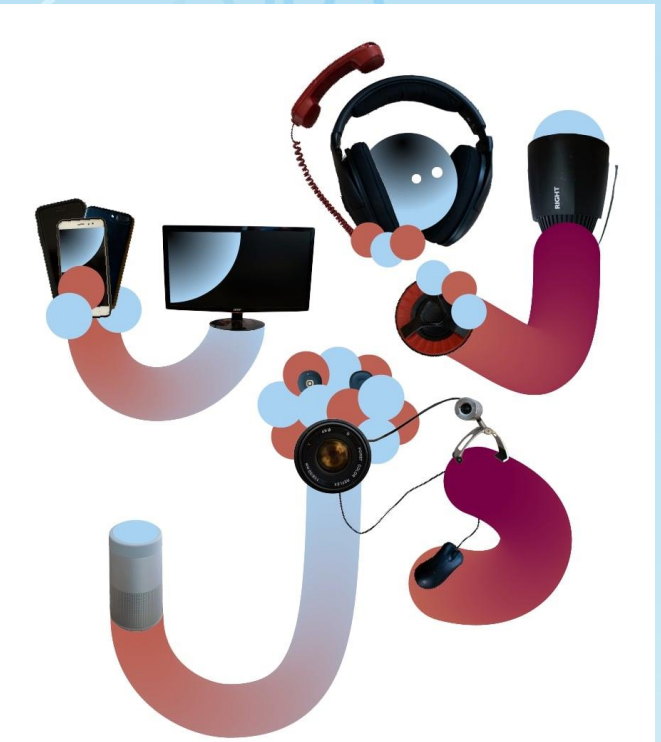
Noodle Factory Teaching Assistant Statistics

1434
Unique Users

3.6/5
Average Feedback Score

97%
Questions Answered



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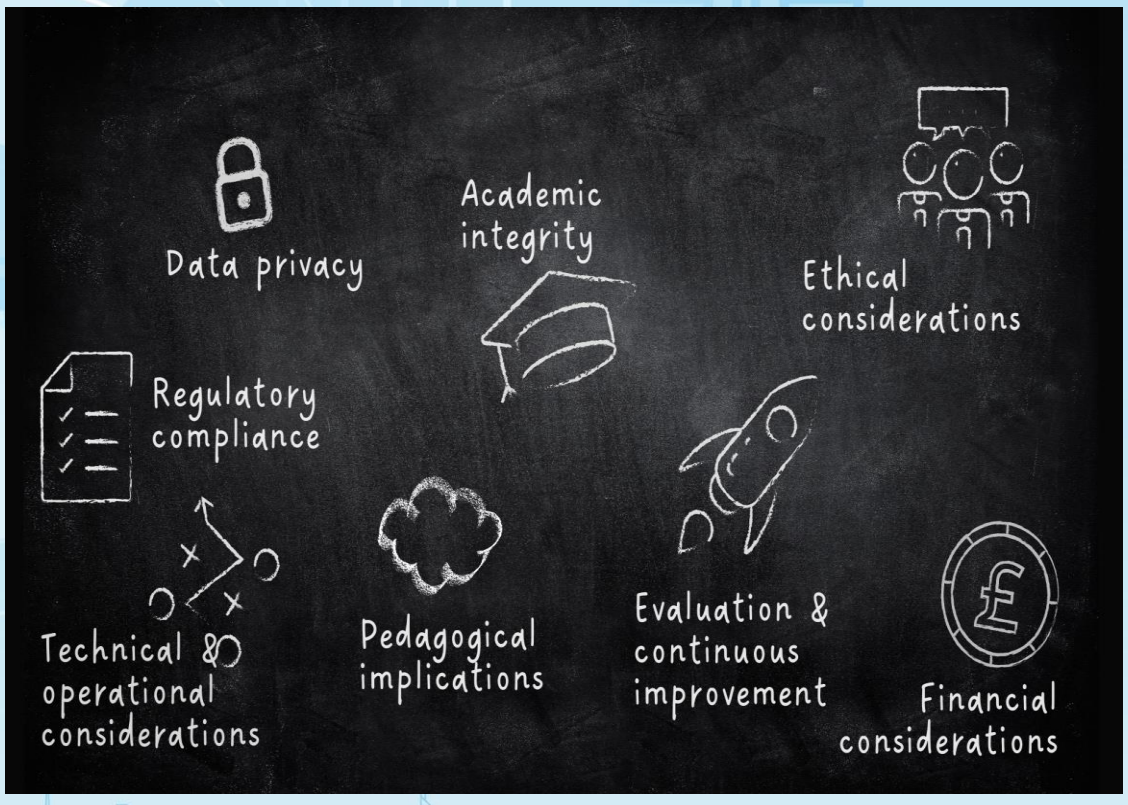
Insights on Usage of AI for Academic Support

- Functionality requires work
- Positive feedback from participants
- AI study buddy effectiveness
- Desire for human element in education
- Pedagogical integration
- Space becoming more competitive



Non-Academic Support

- Financial Support Services
  - Financial advising
  - Suitable and eligible scholarships/bursaries
  - Part-time jobs
  - Money Management

- Well-being and Mental Health Services
  - Counselling
  - Bereavement Support
  - Motivation

Practical Implementation of AI Systems

- Growing
- Integration with existing platforms
- Enhancing accessibility/User-Friendly Interface
- Personalisation and adaptive learning
- Training educators for effectively using AI
- Global reach – local adaptations

Security and Privacy Considerations

- Privacy protection especially in mental health and financial support
- Guidelines for the responsible use of AI in educational institutions
- Alignment with local and international data protection laws
- Regulatory Compliance

Benefits of AI Integration in Student Support

- Making support services more widely available to students
- Responsive and targeted Support to improve student learning journey
- Creating a more supportive environment for diverse student populations

Conclusion

- AI's transformative potential in enhancing the student learning journey
- Encouraging educational institutions to adopt AI-driven solutions responsibly
- Building a future-proof educational framework with AI and cybersecurity
- Collaboration Opportunities

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Thank You

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