THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

COMPX527-25B
Secure Cloud Application Engineering

L1.1- Introduction

Let's get to know each other

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- Lecturer
- Dr Farzana Zahid
- Farzana.zahid@waikato.ac.nz
- *G.2.26*

- *Tutor: Dean Mason*

Moodle

- https://elearn.waikato.ac.nz/
- All communication will be through Moodle
- Assignments submission through Moodle
- Quizzes on Moodle

- Make sure you have access to Moodle
- Discussion forums on Moodle
  - Use them!

Topics

- Introduction to Cloud Computing
- AWS (Amazon Web Services) Overview
- Cloud Security Fundamentals
- Cloud Infrastructure Security
- Identity and Access Management
- Cloud Architectural Concepts
- Cloud Data Security
- Cloud Application Security
- Legal and Compliance
- Group Project Presentations
- Guest Lecture on Cloud Technologies

Assessments

Description	Individual/ Group	100%
Assignments	Individual	20%
Cloud project-based application	Group	40%
Quizzes	Individual	10%
In-Class Test	Individual	30%

Assignments

- ❑ Two Individual assignments
- ❑Assignments from multiple papers may be due in the same week, on the same day. Plan ahead, start early.
- ❑Extension may be granted for situations outside your control. Fill out the extension form provided on Moodle and attach supporting evidence for your request (at least 2 days before the deadline).
- ❑Late Submission will have a **penalty** of 1 mark each day.
- ❑Cite all resources.

Quizzes

- Weekly quizzes
- Based on lecture material or reading for the week.
- Negative marking

Cloud Project-Based Application

- Group assignment: minimum 6 people per group.
- Create a secure cloud application using user data, public datasets, and AWS services for:
  - Storage
  - Computation
  - Networking
  - Security
  - IAM
- Tell me your group members and project idea (proposal).
- Submit a written report, presentation with demonstration.

Cloud Project-Based Application

- Marking Scheme
  - Project Proposal — Group (10%)
  - Presentation and demo — Group (30%)
  - Final report — Group (20%)
  - Security Implementation — Group (20%)
  - Automating deployment — Group (10%)
  - Peer Evaluation — Individual (10%)
- Budget:
  - 50-60$ per group

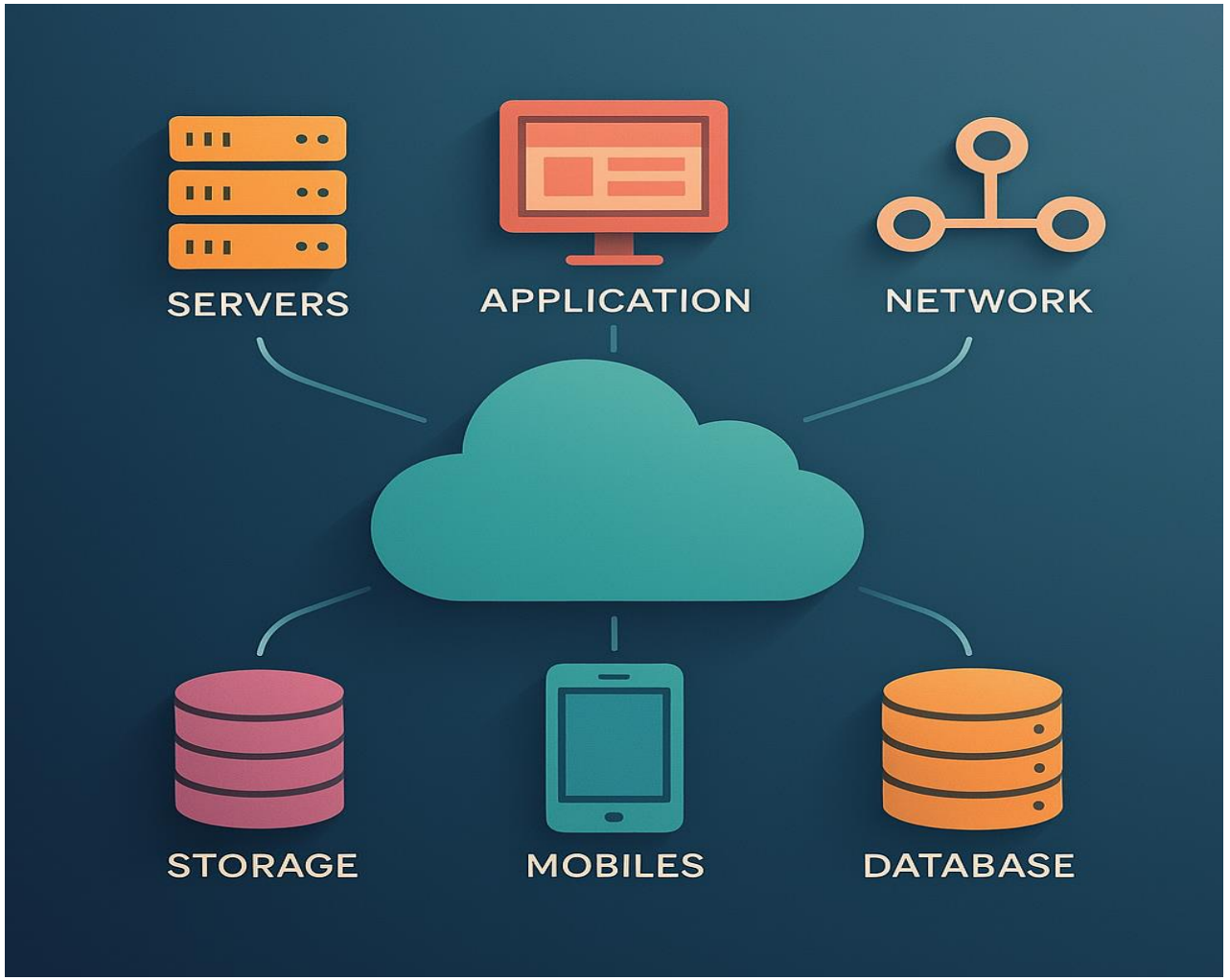
Asking Questions

- Ask questions on Moodle
  - Discussion forum or via private message
- Make a reasonable effort to find answers yourself before emailing a question
  - Has it been answered in the lectures or lecture slides?
  - Has it been answered on Moodle or in the paper outline?
  - **Paper code** in the **subject** line of the email.
- Questions related to group projects should be sent with **all** team members copied in the email.

Plagiarism

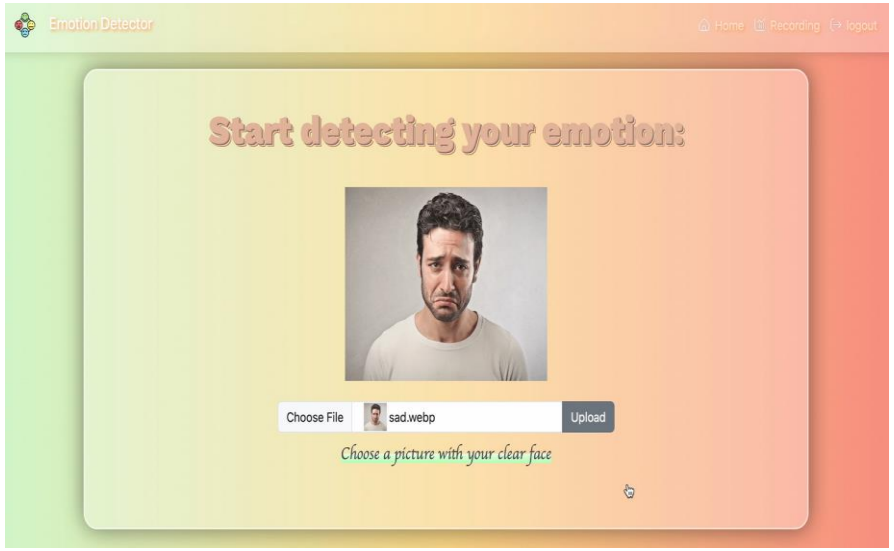
- Plagiarised works will be forwarded to the academic integrity committee.
- This includes
  - copying another student's solution in part or in whole
  - Providing your solution to another student
  - using code (or other aspects) from another source (eg the web) **without correctly acknowledging it**
  - Advertising on the web for solutions to coursework
  - Including example code from lectures, etc., without acknowledgement
- **Use of AI to write any part of any assessment item is not allowed and will be marked with 0.**

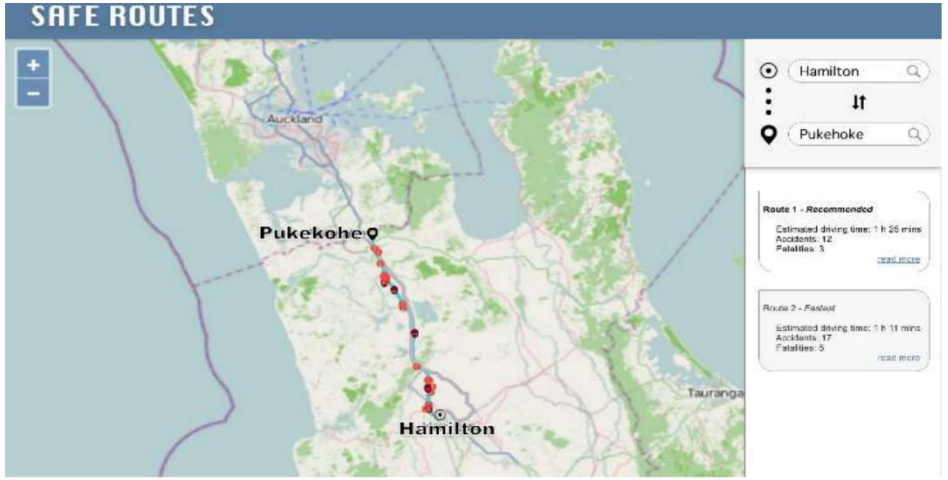
Cloud Computing



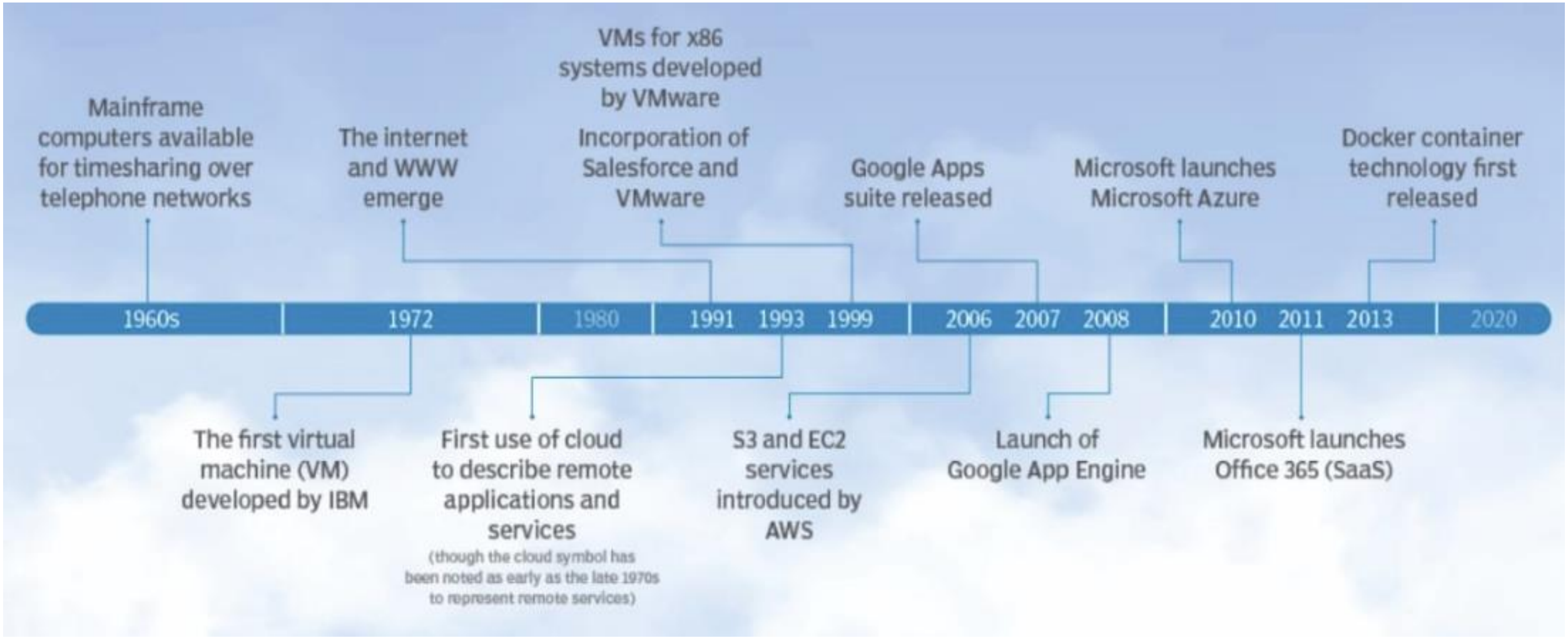
Some popular services

Example Cloud Applications



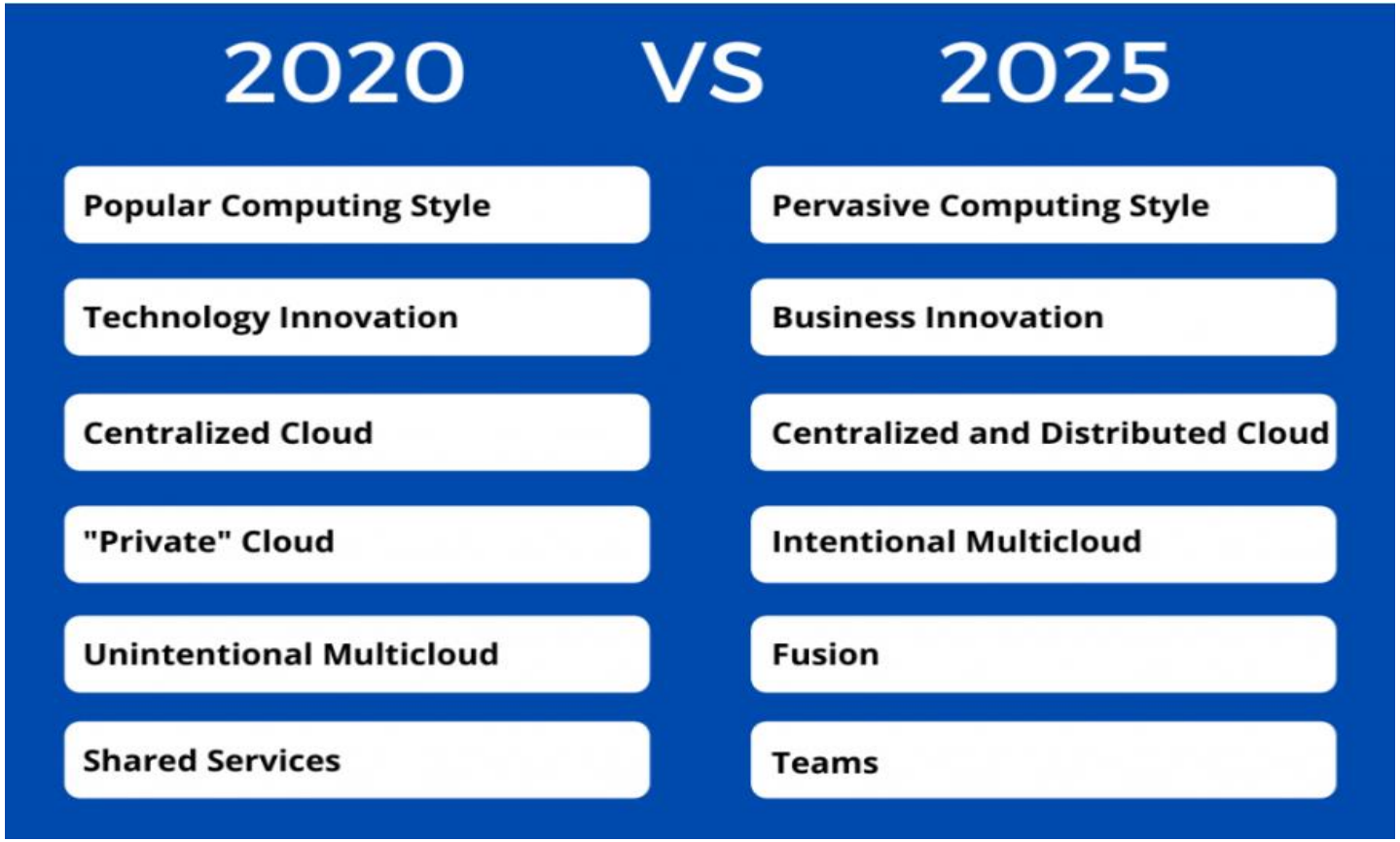


History



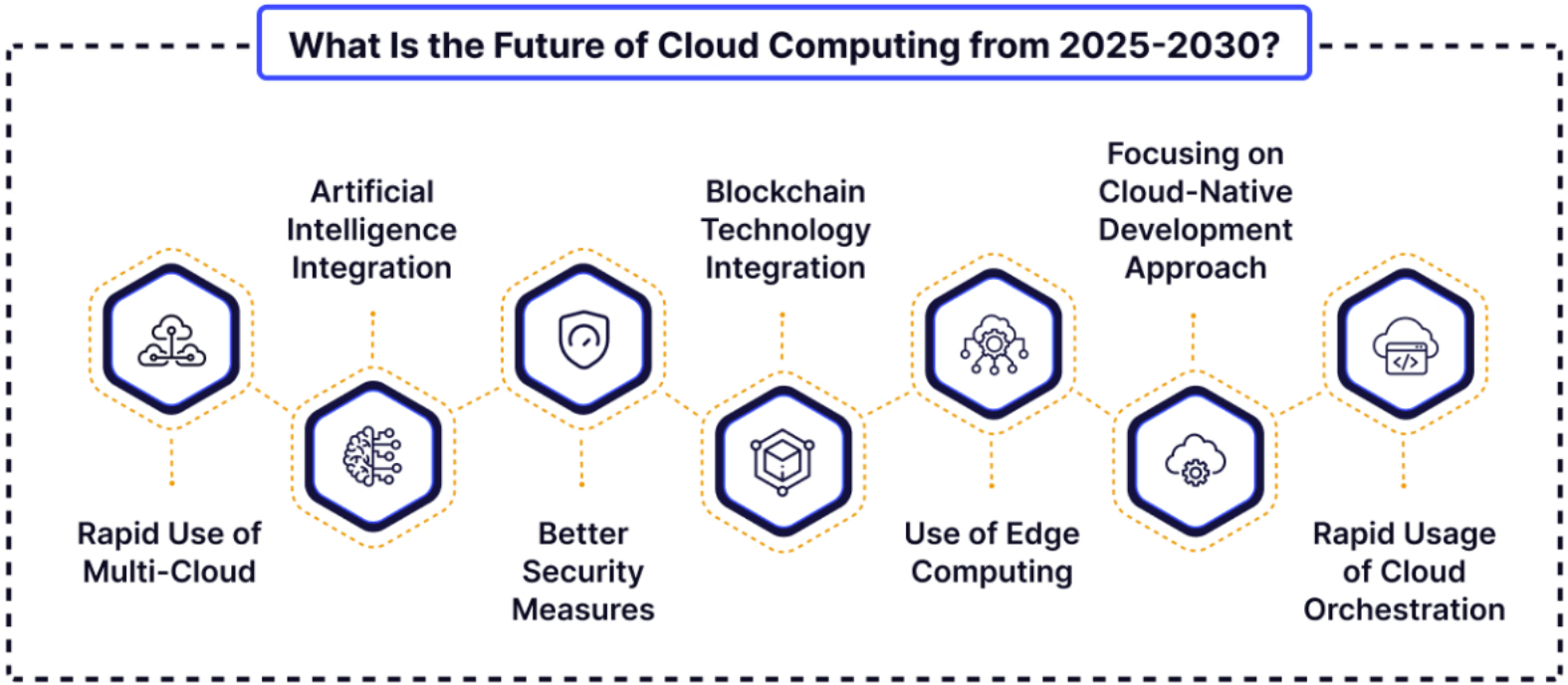
https://www.igmguru.com/blog/best-cloud-computing-services

Cloud shifts from 2020 - 2025



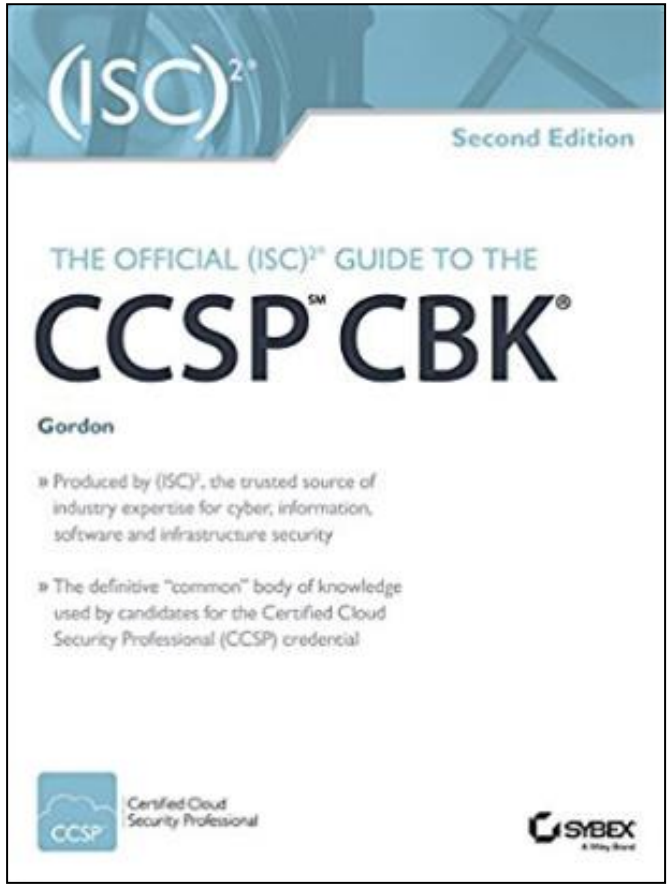
https://www.seasiainfotech.com/blog/history-and-evolution-cloud-computing/

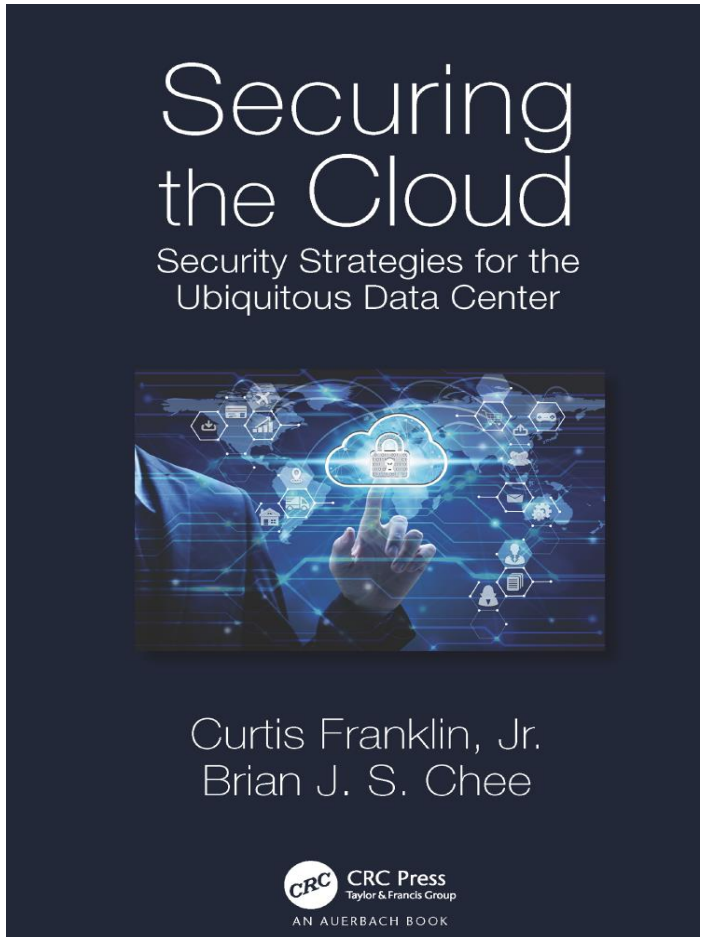
Future of Cloud Computing



https://www.clouddefense.ai/future-of-cloud-computing/

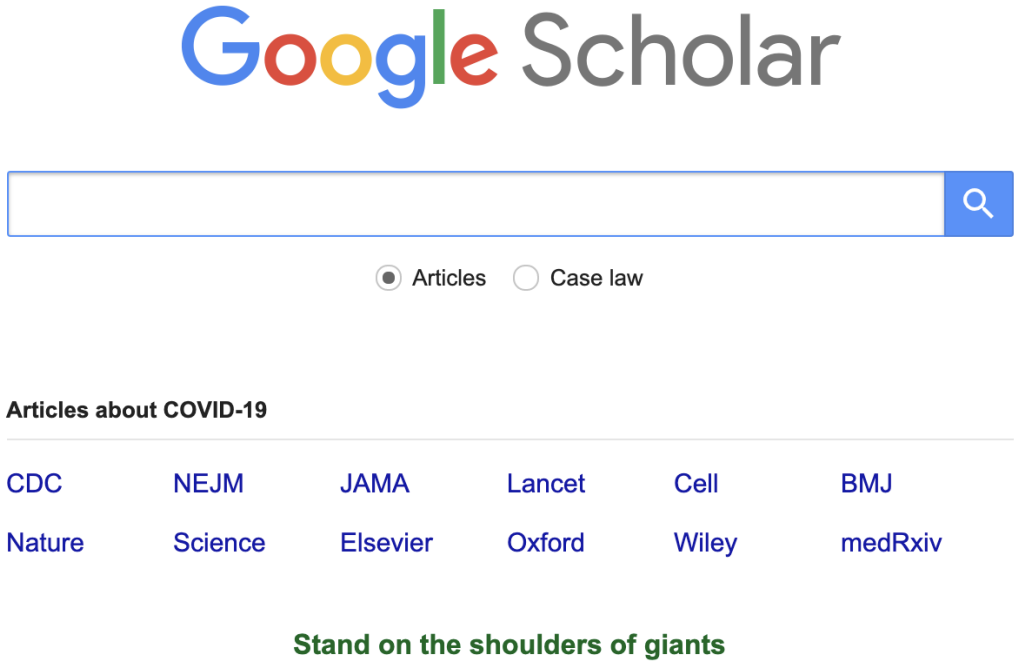
Main Texts


(ISC)²
Second Edition
THE OFFICIAL (ISC)² GUIDE TO THE
CCSP CBK
Gordon
» Produced by (ISC)², the trusted source of industry expertise for cyber, information, software and infrastructure security
» The definitive "common" body of knowledge used by candidates for the Certified Cloud Security Professional (CCSP) credential
CCSP
Certified Cloud Security Professional
SYBEX


Securing the Cloud
Security Strategies for the Ubiquitous Data Center
Curtis Franklin, Jr.
Brian J. S. Chee
CRC Press
Taylor & Francis Group
AN AUERBACH BOOK

Learning outside the textbooks

scholar.google.co.nz



Google Scholar

cloud computing security

Articles

About 35,100 results (**0.09** sec)

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Any time
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[PDF] Emerging challenges in **cloud computing security**: A comprehensive review

[PDF] thesisexpertsofficial.co

AKY Yanamala - International Journal of Advanced …, 2024 - thesisexpertsofficial.com

… to substantiate its analysis of **cloud computing security** challenges. Data sourced from … paper ensures a robust foundation for discussing the evolving landscape of **cloud security**. …

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Research trends in deep learning and machine learning for **cloud computing security**

[PDF] springer.com
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YI Alzoubi, A Mishra, AE Topcu - Artificial Intelligence Review, 2024 - Springer

… and research in **cloud computing security** utilizing deep learning and … for **cloud computing security** utilizing machine learning and deep learning, such as anomaly detection, **security** …

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IT standardization in **cloud computing**: **Security** challenges, benefits, and future directions

[PDF] wjarr.co.in

OC Adeusi, YO Adebayo, PA Ayodele… - World Journal of …, 2024 - wjarr.co.in

… , **security** concerns remain a significant obstacle to **cloud** adoption. Recent studies indicate that over 87% of IT executives consider **cloud computing security** … **security** risks. The global …

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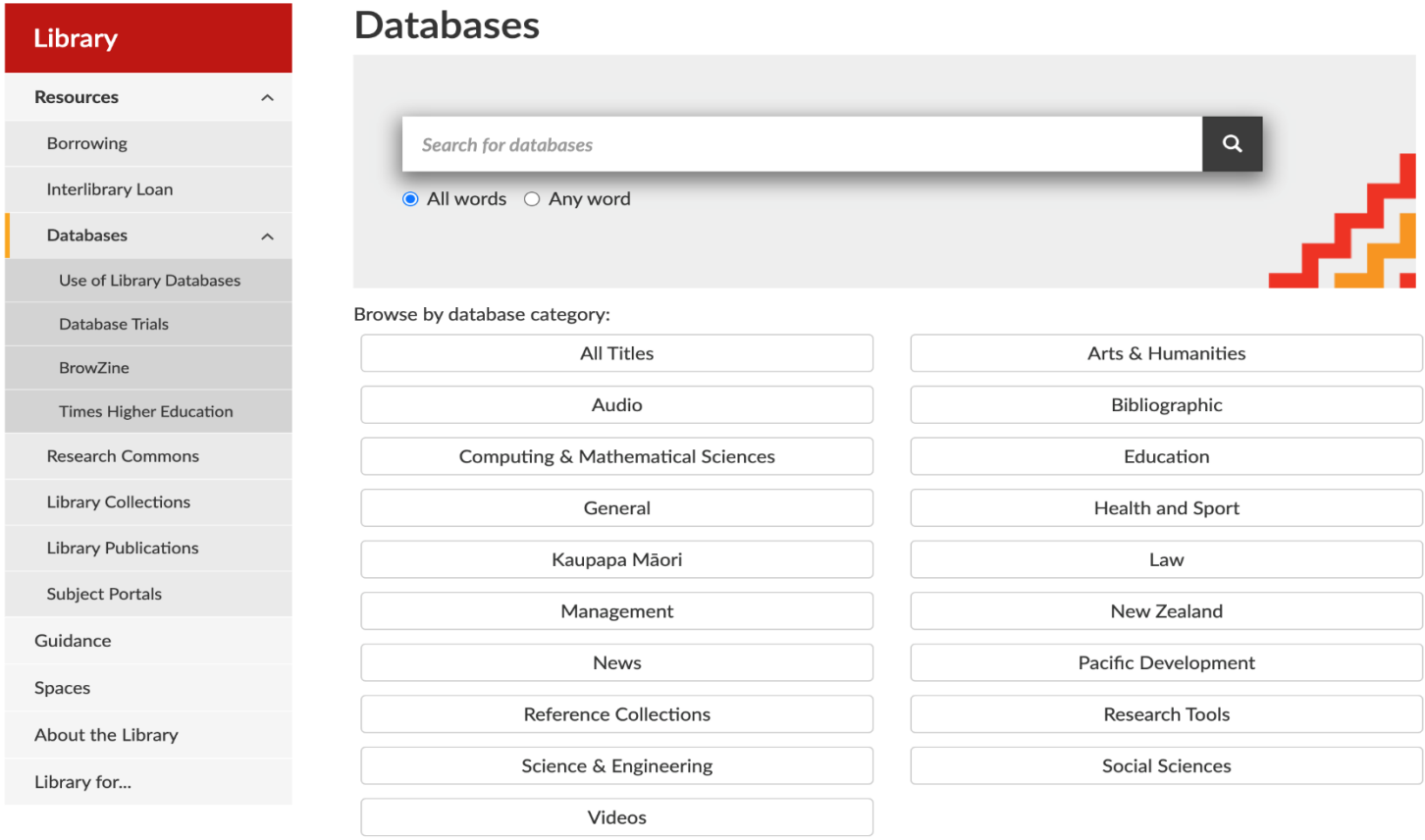
Systematic literature review on **cloud computing security**: Threats and mitigation strategies

[PDF] ssrn.com

University of Waikato Access

- https://www.waikato.ac.nz/library/resources/databases



Databases

- What databases to search? There are a few good ones for CS:
  - IEEE
  - ACM Digital Library
  - Scopus
  - SpringerLink
  - Web of Science
  - Web of Knowledge
  - Wiley
  - EbscoHost
  - Emerald
  - EI (Engineering Village)/ Compendex

Not just from papers

- Industry “White Papers”
- Survey Results
- News articles (look only at source news, not derived news)
- Websites
- YouTube
- Private Communication

Managing Information Overload

Bibliography Managers

- Bibtex
- Endnote
- Zotero

Mindmaps

Reading Papers like a Researcher

- Read the title and abstract
- Is it related?
- Read the conclusion
- Then look through the paper (scanning)
  - What is the problem this paper is trying to address?
  - What approaches does it use to solve the problem?
  - How does it evaluate its solutions?
- Start from the introduction
- Circle the ‘questionable’ and ‘interesting’ parts
- Write a conclusion about its main contribution (if any), and record it in your document management tool
- Check its references and also cited references

class reps

http://sci.waikato.ac.nz/students/class-representation

Q&A