# Part 1


# CS 589– **Introduction to Quantum Computing and it's Applications**

Prof. Ahmed Banafa

Summer 2024

# Prof. Ahmed Banafa


- **Prof. Ahmed Banafa** is an expert in IoT, Blockchain, Cybersecurity, and AI.
- Strong background in research, operations, and management.
- Received the Certificate of Honor from the City and County of San Francisco.
- Awarded the Haskell Award for Distinguished Teaching from the University of Massachusetts Lowell.
- Received the Author & Artist Award from San Jose State University.
- Recognized as the No.1 tech voice to follow by LinkedIn with over 49,000 followers.
- Featured in Forbes, IEEE-IoT, and MIT Technology Review.
- Frequently appears on ABC, CBS, NBC, BBC, and Fox TV and Radio stations.
- Studied Cybersecurity at Harvard University.
- Studied Digital Transformation at the Massachusetts Institute of Technology (MIT).
- Holds a Master's Degree in Electrical Engineering.
- Holds a PhD in Artificial Intelligence.

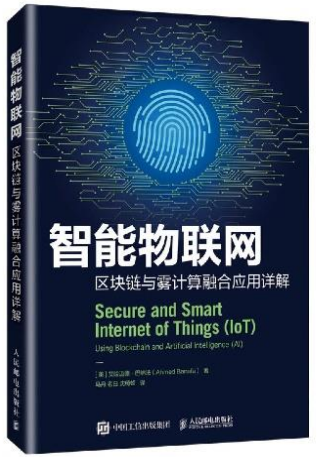
700+

Universities a & Colleges







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Universities & Colleges

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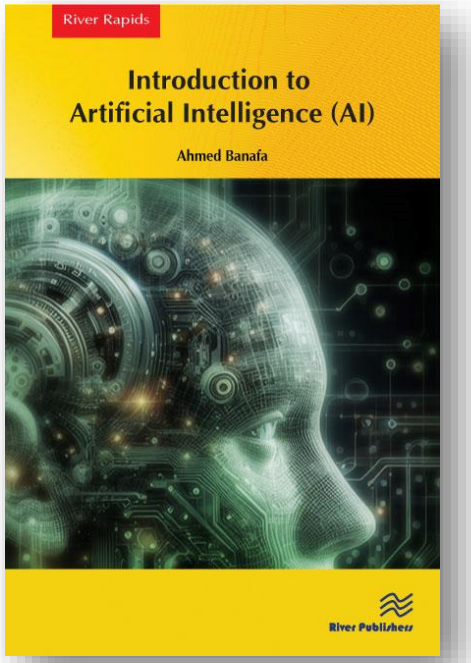
# Forthcoming Books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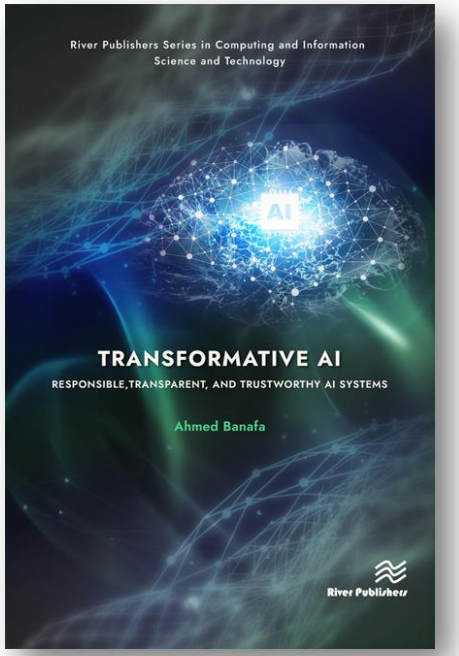
Ahmed Banafa
River Publishers


River Publishers Series in Computing and Information
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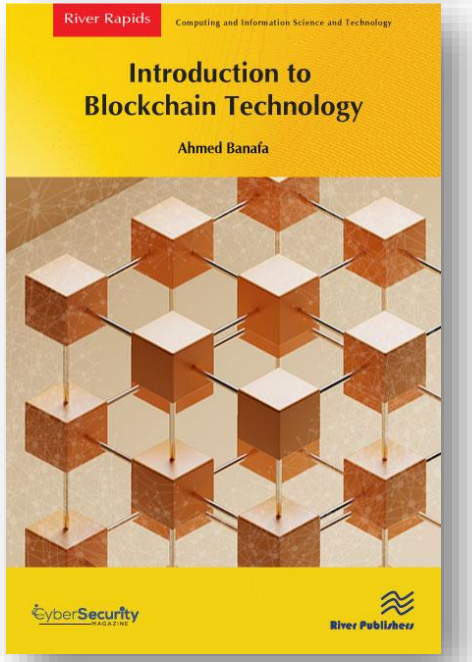
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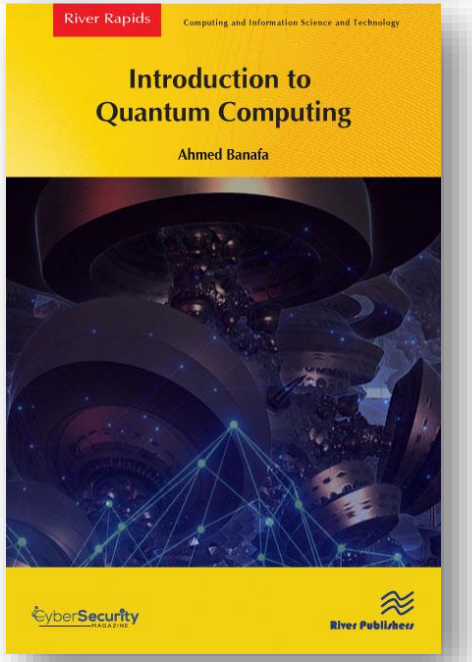
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Internet of Things (IoT)
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IOT
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# Course Description

- In this class you learn the difference between Quantum Computing and Classic Computing, the concept of Qubits, difficulties facing Quantum Computing, and the principles of Quantum Superposition and Entanglement.
- Quantum Computing Categories will be discussed in details, applications of Quantum Computing in AI, IoT, Blockchain, Communications, and Encryption will be covered.

- Also, Quantum Internet, Quantum Cryptography and Quantum Teleportation will be explained, in addition to post-Quantum technologies, they will be introduced and discussed. Industry Guest Speaker(s) will be invited to talk about this futuristic technology.

# Textbook


*Quantum Computing and Other Transformative Technologies*, by Ahmed Banafa, (River Publishers Series in Information Science and Technology),
ISBN-13: 978-8770226844
ISBN-10: 8770226849

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|---|---|---|
| 4 Homework assignments (50 points each) | 20% | 200 Points |
| Final Research Paper | 10% | 100 Points |
| Test 1 | 10% | 100 Points |
| Test 2 | 10% | 100 Points |
| Midterm Exam | 15% | 150 Points |
| Final Exam | 25% | 250 Points |
| Quizzes and Discussion | 05% | 050 Points |
| In-class Presentation | 05% | 050 Points |
| | | **1000 Points** |

# Hot Trends of Technology

2023 and beyond