

CS 891
Introduction to
Emerging Technologies
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Lecture 5: Introducing our topics!

Lecture Topics

- Our topics!!!
 - Cloud Computing
 - Edge Computing; Mobile and Internet of Things
 - Machine Learning/Artificial Intelligence
 - Blockchain
 - Big Data and Data Management
 - Agile/DevOps
 - Cyber Security

Edge Computing

- Light-weight computation/storage
- Potentially limited communications/networks
- Sensing and discovery
- <https://atarc.org/wp-content/uploads/2019/01/2017-10-ATARC-Federal-Mobile-Technology-Summit-White-Paper-1.pdf>

Cloud Computing

- “Someone else's computer”
- Scaling, services, reliability
- https://www.mitre.org/sites/default/files/publications/PRS18-2725-1_june2018_federal_cloud__data_center_summit_report.pdf

Edge Computing

- Embedded computing
- Light-weight
- Communication
- Security
- <https://atarc.org/wp-content/uploads/2019/01/2017-10-ATARC-Federal-Mobile-Technology-Summit-White-Paper-1.pdf>

ML/AI

- No silver bullet!
- Edge cases, training, pattern recognition
- Explainable AI
- <https://atarc.org/wp-content/uploads/2019/01/ATARC-Federal-Emerging-Technology-Summit-White-Paper-2018-04-17-2.pdf>

Blockchain

- Cryptocurrency
- Permissioned vs public
- Promise vs reality
- <https://atarc.org/wp-content/uploads/2019/01/ATARC-Federal-Emerging-Technology-Summit-White-Paper-2018-04-17-2.pdf>

Big Data

- “How big is 'big'?”
- Management vs utilization
- Quality
- Cross-section with AI/ML
- <https://atarc.org/wp-content/uploads/2019/04/Download-File.pdf>

Agile/DevOps

- Practice and culture, not tools
- Iteration and cyclic
- Requirements and execution
- <https://atarc.org/wp-content/uploads/2019/01/2018-03-01-ATARC-Federal-DevOps-Summit-White-Paper-1.pdf>

Cyber

- Security evaluations
- Offensive vs defensive
- <https://atarc.org/wp-content/uploads/2019/01/2018-01-25-ATARC-Federal-CISO-Summit-White-Paper-1.pdf>

Reminder!

- You are responsible for becoming **our** expert in the topic!
- Find the fallacies, disprove them, explain the topic
- Then, apply this to a research paper!