



Exploring the mutual role of BIM, Blockchain and IoT in changing the design, construction and operation of built assets

An ARCOM doctoral workshop

25 March 2020

304E Sandyford Building, Northumbria University, Newcastle

The architecture, engineering, construction and operations (AECO) industry is going through a period of digital transformation with many new technologies, processes and practices improving day-to-day operations at pace. Distributed ledger technology (DLT), (e.g. Blockchain, the underpinning technology for cryptocurrency Bitcoin) is suggested as a key technology to support this digital transformation due to its inherent characteristics to redefine the trust relationship between parties leading to better collaboration and information sharing. DLT offers decentralisation, privacy, anonymity, immutability, traceability and transparency among others. When coupled with smart contracts, it offers a powerful tool to support solutions to the industry's many challenges such as low productivity, poor procurement models, fragmentation, and the need for payment and regulatory reform.

DLT is still at a nascent stage in its development. This workshop is proposed to support doctoral researchers in broadening their knowledge and understanding of the application of DLT in AECO through sharing their research and networking with their peers.

Abstracts should be themed on the following topics:

- Building Information Modelling (BIM)
- Internet of Things (IoT)
- Digital Twins
- Construction supply chain
- Digital construction
- Payments
- Smart contracts
- Smart technologies
- Smart buildings
- Smart cities
- Health and safety
- Automation
- Data provenance
- Integration with existing technologies
- Industry 4.0
- Other AECO-related topics

Workshop Conveners

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Key dates

| | |
|----------------------------|-----------------|
| Abstract submission | 5 January 2020 |
| Notification of acceptance | 13 January 2020 |
| Full paper submission | 1 March 2020 |
| Notification of full paper | 9 March 2020 |
| Workshop | 25 March 2020 |

Abstract Submission

Participants have the option to submit an abstract to present an academic paper or propose an interactive breakout session to support data collection on one or more of the themes detailed above. Following notification of acceptance of abstracts, authors will be invited to submit a full paper of between 6 and 10 pages. Please send abstract submissions to: Jennifer.Li@Northumbria.ac.uk.

Proceedings

Following the workshop, papers will be published in the Workshop Proceedings, and made publicly available on the ARCOM website.

Registration

Attendance at the workshop is free. Registration will open in January 2020.

Travel Grants

A limited amount of financial support is available to presenters who do not have their own funding to travel to the workshop from within the UK. Please contact Jennifer Li for further information.

Indicative Programme

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|---------------|------------------------------------|
| 10:00 - 10:15 | Arrival and registration |
| 10:15 - 10:30 | Welcome and introduction |
| 10:30 - 11:15 | Opening Keynote (TBC) |
| 11:15 - 12.45 | Doctoral presentations |
| 12:45 - 13:45 | Lunch |
| 13:45 - 14:30 | Interactive breakout session (TBC) |
| 14:30 - 16:00 | Doctoral presentations |
| 16:00 - 16:30 | Panel discussion & final remarks |
| 16:30 | Close |



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