

Thesis Project Portfolio

Blockchain Technology: A Decentralized Future

(Technical Report)

Blockchain and the Right to Privacy: A Critical Analysis

(STS Research Paper)

An Undergraduate Thesis

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University of Virginia • Charlottesville, Virginia

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Bachelor of Science, School of Engineering

Lucas Banerji

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Sociotechnical Synthesis

The first paper delves into the underlying infrastructure of blockchain, exploring its various applications in multiple domains, including finance, medicine, social software, and storage. By making the technology more transparent and accessible, the research aims to foster a stronger base of knowledge for businesses and governments to utilize and build upon blockchain technology. The second paper explores the potential of blockchain technology to revolutionize personal privacy and data protection, highlighting how big tech companies have already launched competitive blockchain services. It investigates the possibility of blockchain replacing traditional authentication methods, such as usernames and passwords, by providing encrypted digital identities for managing personal information. The paper also applies the Social Construction of Technology framework to analyze the discourses shaping the meanings and perceptions of blockchain in the context of privacy and data protection.

Together, these papers contribute to a deeper understanding of the potential applications and implications of blockchain technology in various sectors, emphasizing the need for increased transparency, accessibility, and education. By addressing the challenges of mass adoption and exploring its impact on personal privacy protection, the papers provide a comprehensive view of blockchain's potential to transform both modern business and individual lives. Ultimately, it highlights the importance of continued research and discourse in unlocking the full potential of this innovative and promising technology.