



CBER-CDFT-DSF Summer School

June 20 - 21, 2024

Columbia Engineering Innovation Hub

2276 12th Avenue, Floor 2 Tang Family Hall, New York, NY 10027

June 20th: Microstructure of Ethereum Blockchain

Welcome and Opening Remarks Agostino Capponi, Columbia University	8:15 am – 8:30 am
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<u>Introduction to Ethereum</u> Fahad Saleh, University of Florida	8:30 am – 9:45 am
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Readings: **John, Monnot, Mueller, Saleh, and Schwarz-Schilling (2024)**, Buterin, Hernandez, Kamphefner, Pham, Qiao, Ryan, Sin, Wang, and Zhang (2020), Roşu and Saleh (2021), Saleh (2021), Schwarz-Schilling, Saleh, Thiery, Pan, Shah, and Monnot (2023)

Coffee Break	9:45 am – 10:00 am
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<u>Decentralized Exchanges</u> Andreas Park, University of Toronto	10:00 am – 11:15 am
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Readings: **Park (2022)**, Barbon and Rinaldo (2021), Milionis, Moallemi, Roughgarden, and Zhang (2022), Capponi and Jia (2023), Hasbrouck, Rivera, and Saleh (2023), Park (2023), Lehar and Parlour (2024)

Lunch	11:15 am – 12:45 am
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<u>Proposer-Builder-Separation</u> Agostino Capponi, Columbia University	12:45 am – 2:00 pm
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Readings: **Capponi, Jia, and Olafsson (2024)**, Bahrani, Garimidi, and Roughgarden (2024), Gupta, Pai, and Resnick (2023), John et al. (2024)

Coffee Break

2:00 pm – 2:15 pm

AMM Design and Maximal Extractable Value

2:15 pm – 3:30 pm

Ciamac Moallemi, Columbia University

Readings: [Milionis et al. \(2022\)](#), [Herrmann \(2022\)](#), [Canidio and Fritsch \(2023\)](#), [Dewey, Moallemi, and Brown \(2023\)](#), [Milionis, Moallemi, and Roughgarden \(2023\)](#), [Adams, Moallemi, Reynolds, and Robinson \(2024\)](#), [Fritsch and Canidio \(2024\)](#)

Coffee Break

3:30 pm – 3:45 pm

Computer Science Perspective

3:45 pm – 5:00 pm

Vassilis Zikas, Purdue University

Readings: [Garay, Katz, Maurer, Tackmann, and Zikas \(2013\)](#), [Alwen, Katz, Maurer, and Zikas \(2012\)](#), [Halpern, Pass, and Seeman \(2015\)](#), [Badertscher, Garay, Maurer, Tschudi, and Zikas \(2018\)](#), [Badertscher, Lu, and Zikas \(2021\)](#)

June 21st: Smart Contracts and Decentralized Finance

Introduction to Smart Contracts

8:30 am – 9:45 am

Fahad Saleh, University of Florida

Readings: [John, Kogan, and Saleh \(2023\)](#), [Wood \(2014\)](#)

Coffee Break

9:45 am – 10:00 am

Tokenomics: Categorization, Functionality, Pricing and Design

10:00 am – 11:15 am

Lin William Cong, Cornell University

Readings: [Cong and Xiao \(2021\)](#), [Cong, Li, and Wang \(2021b\)](#), [Cong, Li, and Wang \(2022b\)](#), [Cong, Karolyi, Tang, and Zhao \(2021a\)](#), [Cong, He, and Tang \(2022a\)](#), [Cong, Easley, and Prasad \(2023a\)](#), [Cong, He, and Tang \(2023b\)](#), [Malinova and Park \(2023\)](#)

Lunch with DSF Session

11:15 am – 12:45 am

Nikhil Vadgama, University College London

Stablecoins and Central Bank Digital Currencies

12:45 am – 2:00 pm

David Yermack, NYU Stern

Readings: **Brunnermeier, James, and Landau (2019)**, **Barrdear and Kumhof (2016)**, **Bank for International Settlements (2023)**, **Bank for International Settlements (2024)**

Coffee Break

2:00 pm – 2:15 pm

Stablecoins and Decentralized Lending Protocols

2:15 pm – 3:30 pm

Quentin Vandeweyer, University of Chicago

Readings: **d’Avernas, Maurin, and Vandeweyer (2024)**, **Rivera, Saleh, and Vandeweyer (2024)**, **Gorton, Klee, Ross, Ross, and Vardoulakis (2022)**, **Lyons and Viswanath-Natraj (2023)**

Coffee Break

3:30 pm – 3:45 pm

Systemic Risk in Decentralized Lending Protocols

3:45 pm – 5:00 pm

Julien Prat, Ecole Polytechnique

Readings: **Tovanich, Kassoul, Weidenholzer, and Prat (2023)**, **Eisenberg and Noe (2001)**, **Glasserman and Young (2016)**, **Bartoletti, Chiang, and Lafuente (2021)**, **Lehar and Parlour (2022)**

Closing Remarks

5:00 pm – 5:15 pm

Agostino Capponi, Columbia University

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