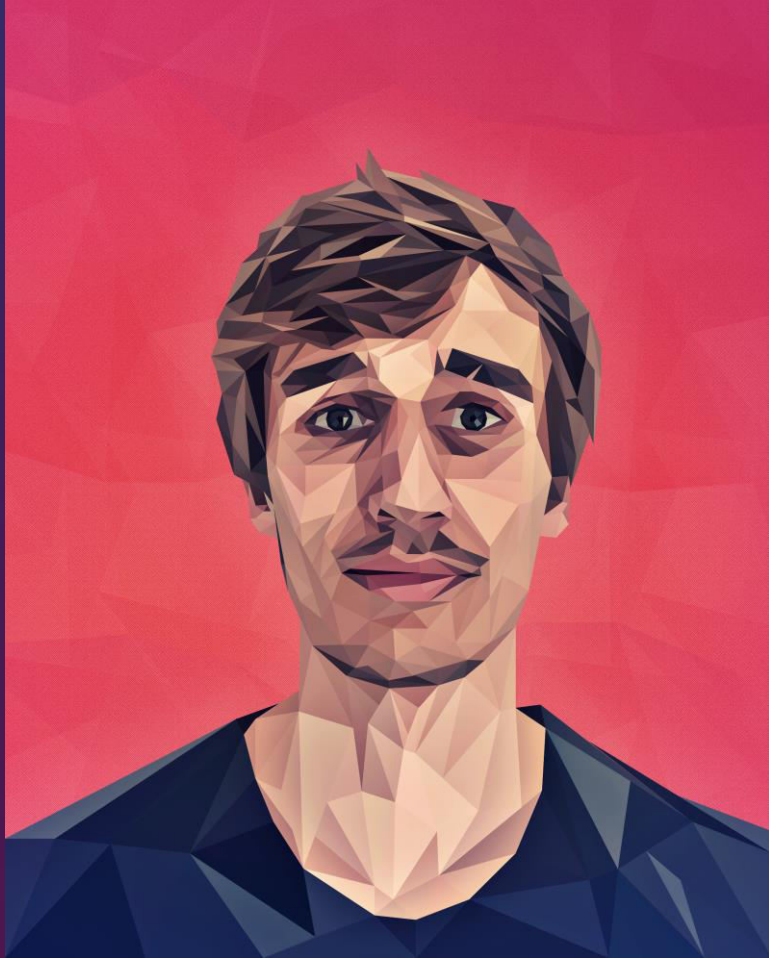




# Tendermint



# Who am I?



- Adrian Brink
- Core Developer @ Tendermint
- Background in Software Engineering/Development and Business Management
- Lived and worked in Denmark, Canada, Germany, and the UK
- Avid drone enthusiast
- Research interest:
  - Consensus Engines
  - E-voting
  - Gambling
  - Usability



# Let's start with questions

Who has heard / knows about  
Tendermint || Ethermint || Basecoin?



# Let's start with questions

Who has installed / used any of the  
previous programs?



# Let's start with questions

Who has tried to use any of our  
testnets?



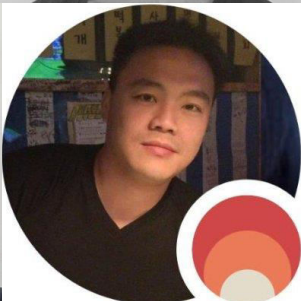
# Let's start with questions

Who has managed to send some coins  
between the two separate Basecoin  
blockchains?



# Who's behind Tendermint?

- The core team of 10 (and growing) amazing people





# My work at Tendermint



Ethernint



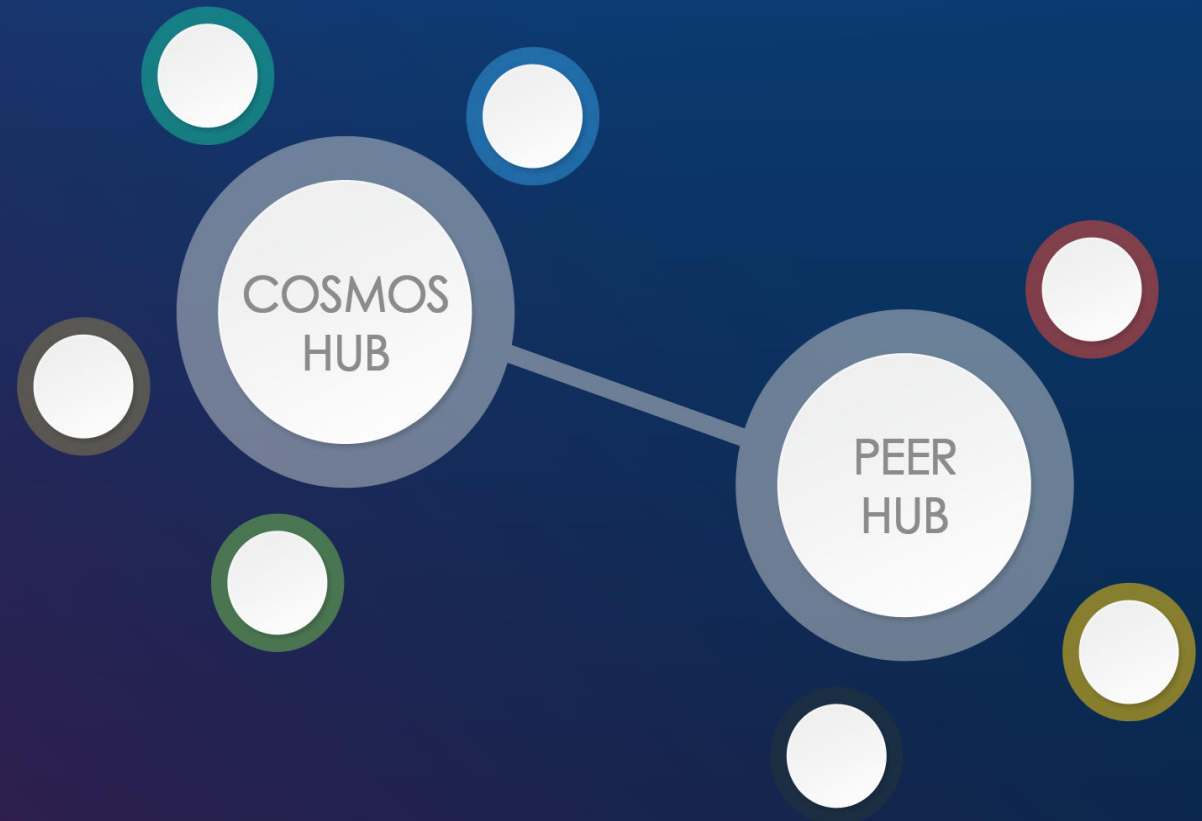
- Tendermint Core
- Ethernint
- Peg Zones
- Rust Support
- Enterprise Integrations
- Developer Outreach





# What is the COSMOS hub?

- Scalable Cryptocurrency
- The COSMOS hub facilitates moving value across different zones and hub
- Arbitrary business logic in the application layer
- Instead of one to rule them all there will be multiple to work together





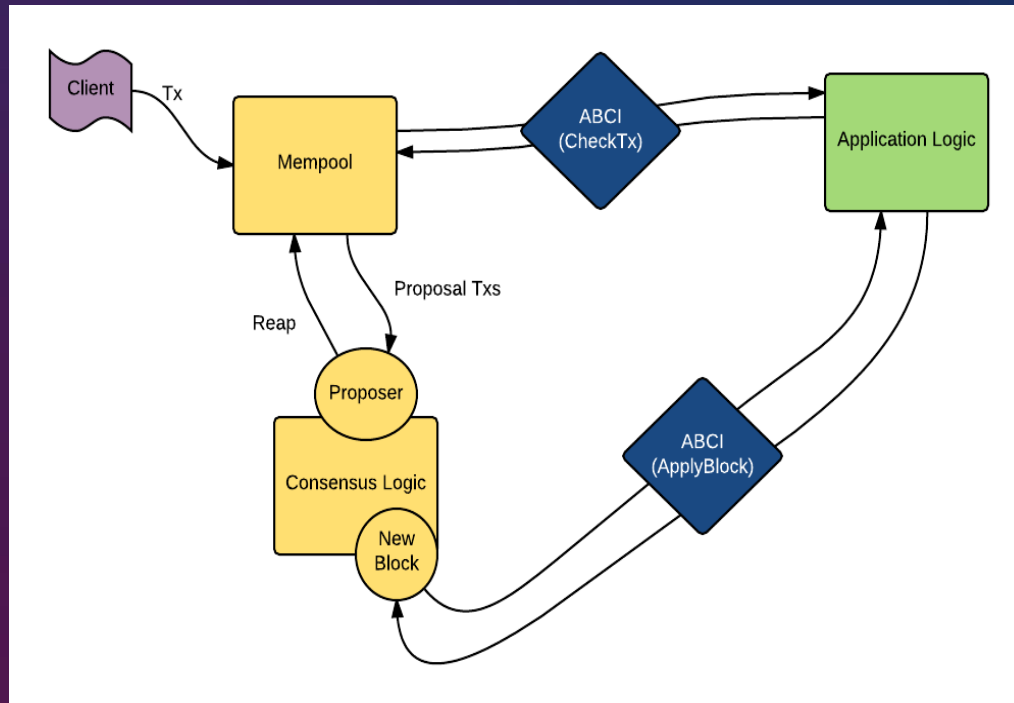
# What are we building?

Everything that is needed for the  
**COSMOS Hub**

- Tendermint Core Engine
- COSMOS Apps
- Tendermint Apps
- ABCI Protocol
- Peg Zones
- Decentralised Exchange
- Enterprise Solutions
- IBC Protocol



# Brief Overview of Tendermint



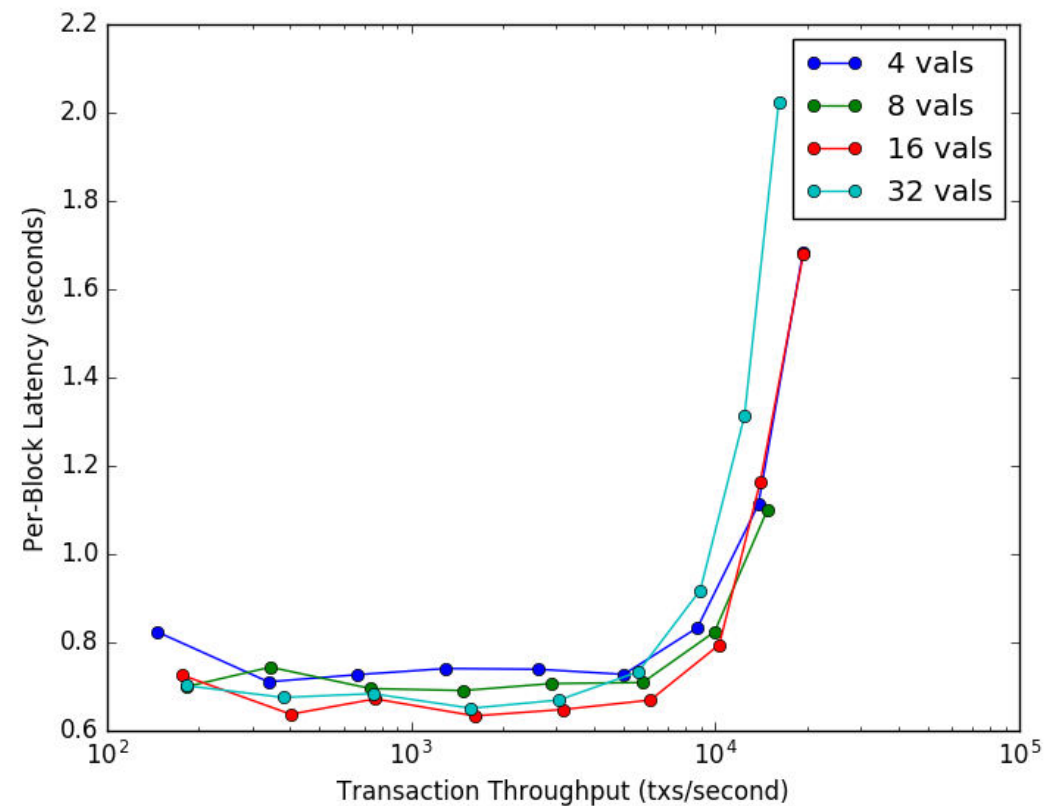
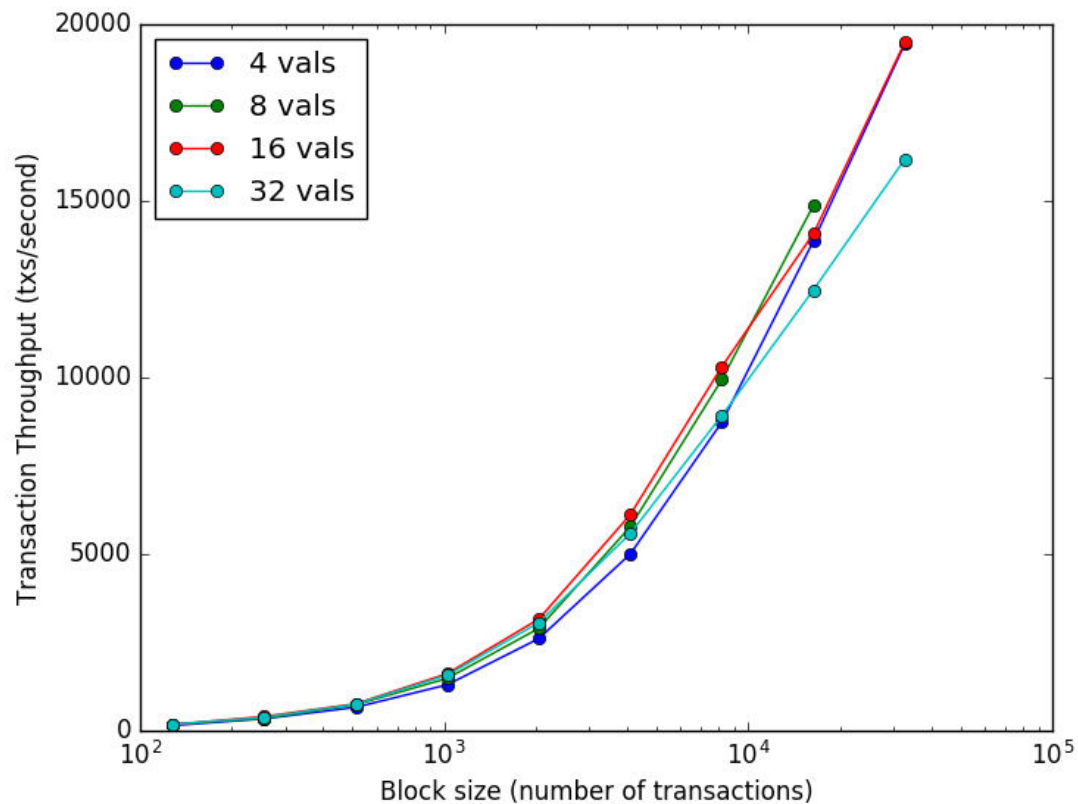
- The Blockchain is secured by Tendermint consensus
  - Proof-of-Stake algorithm that uses security deposits
- Application logic is abstracted away
  - Arbitrary business logic can be build on top of Tendermint
- Standalone Tendermint application can become zones on the COSMOS hub



# Why Tendermint and what makes us different?

- I. Tendermint Core implements a Proof-of-Stake consensus algorithm
  - Doesn't waste electricity but rather uses security deposits
  - Secure and formally verified
  - Full specification on GitHub
- II. Guarantees safety & liveness through the algorithm and a weak synchrony assumption
- III. Is optimal Byzantine Fault Tolerant
  - Requires  $+1/3$  byzantine failures to violate safety/liveness
- IV. Is fully fork accountable
  - We can figure out who tried to cheat and punish them
- V. Much simpler than other implementations such as Casper (Ethereum)

# Properties and possible application

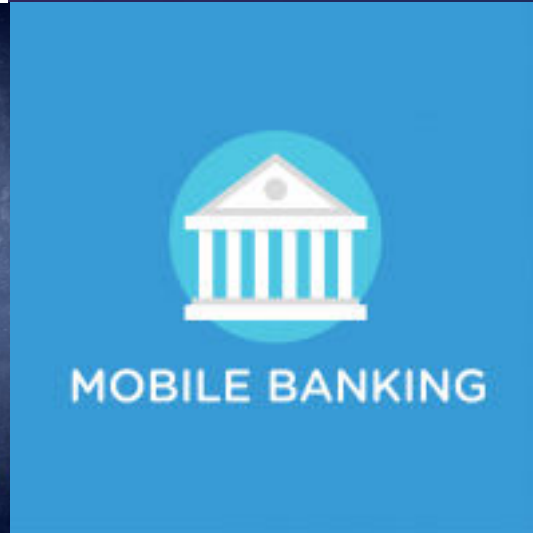
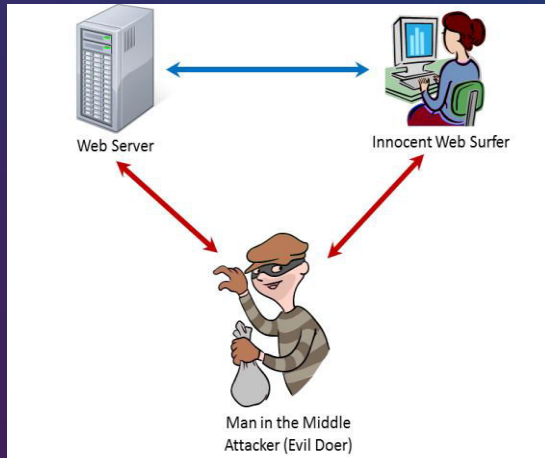


7 datacenters on 5 continents (AWS - c3.8xlarge)



# Properties and possible application

- Fast and permanent block finality
- Efficient light clients are available
- The validator set is known and accountable
  - Regional zones

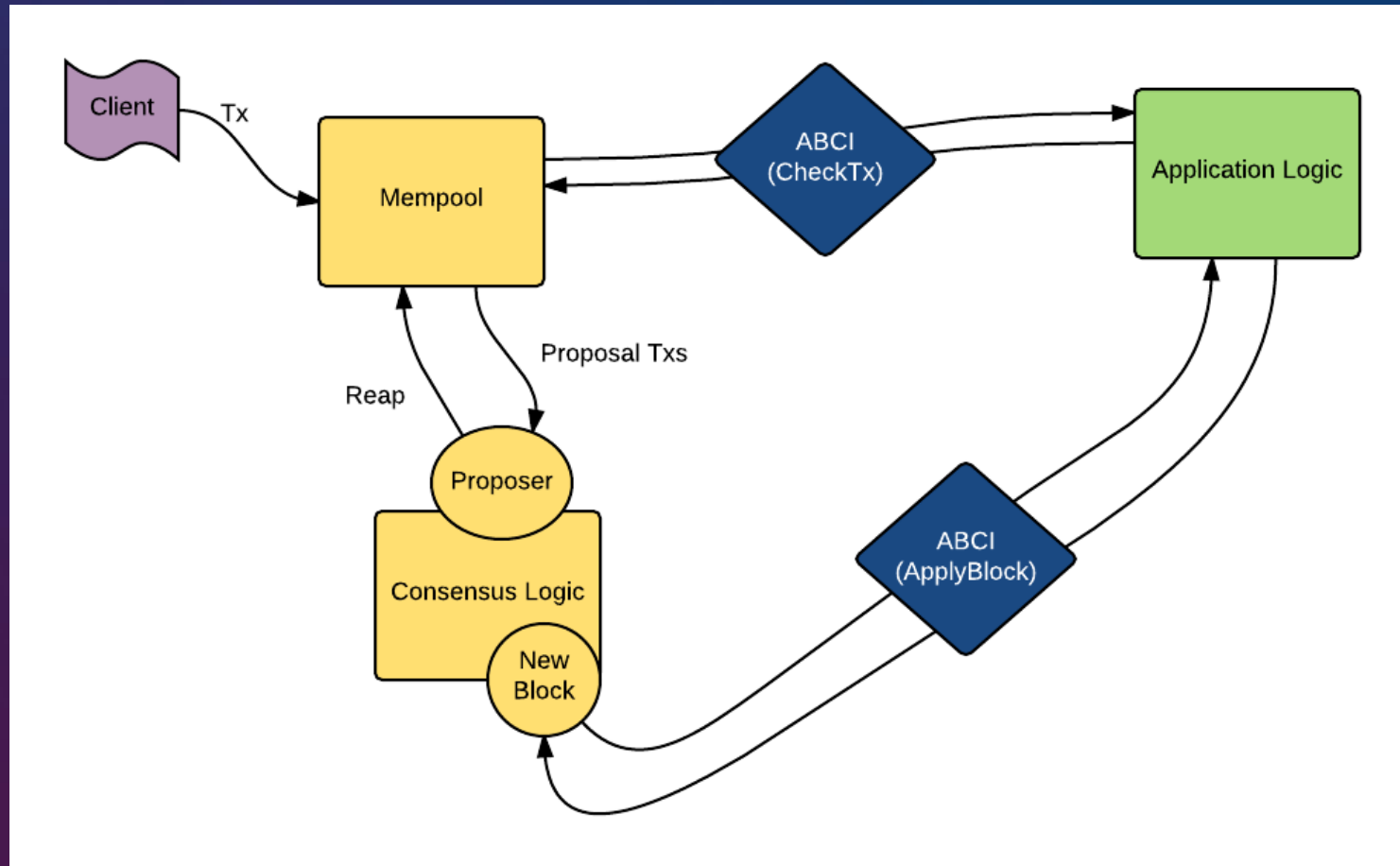




# How to write your own business application?

- The easiest way is to implement everything on top of Ethermint in solidity
- We provide language bindings for Rust, Java, Go, JavaScript if you want to write your own persistent state machine
- Implement a couple of required messages, such as Info() and DeliverTx()
- Pitfalls:
  - Tendermint core opens three separate socket connections
  - Some events can run concurrently, whereas others require sequential execution
  - Speed is of essence essentially for apps that require larger application states
  - Light-clients have to be considered from the beginning

# How to write your own business application?



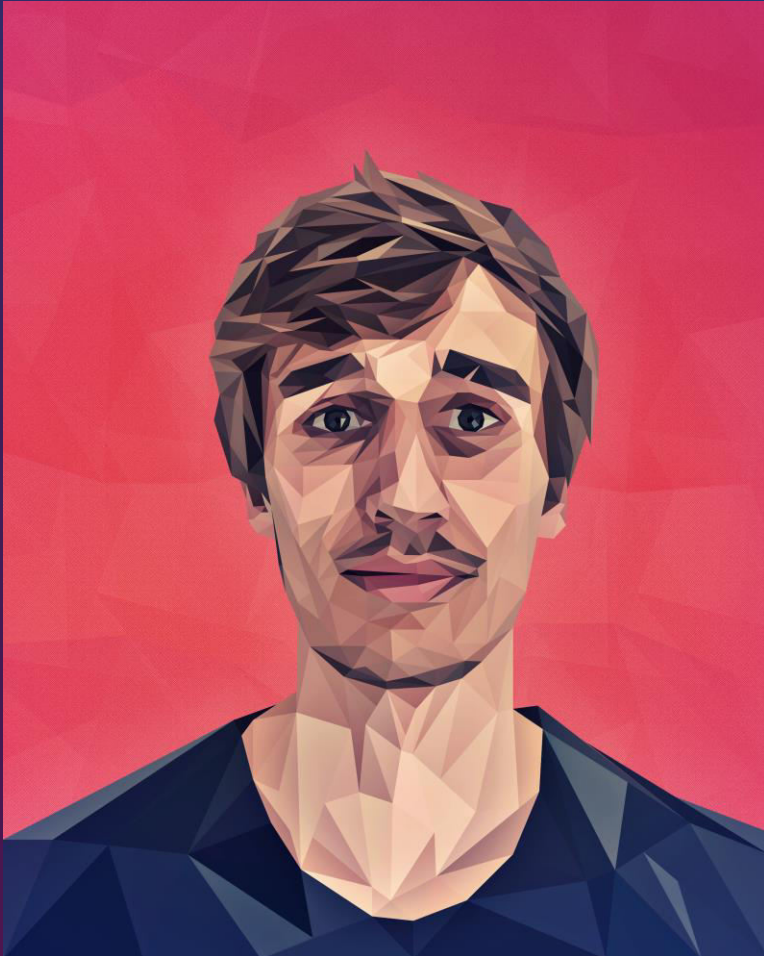




# Questions?



# Where to find me?



- Adrian Brink
- Core Developer @ Tendermint
- Twitter: [@adrianbrink](https://twitter.com/adrianbrink)
- Github: [adrianbrink](https://github.com/adrianbrink)
- Telegram: [adrianbrink](https://t.me/adrianbrink)
- Email: [adrian@tendermint.com](mailto:adrian@tendermint.com)  
|| [adrian@brink-holdings.com](mailto:adrian@brink-holdings.com)
- Research interest:
  - E-voting
  - Gambling
  - Usability
  - Developer on-boarding
  - Consensus Engines



# Extra Resources

- [Tendermint/COSMOS Whitepaper](#)
- [Tendermint in a Nutshell](#)
- [Slack Channel](#)
- [Epicenter – Podcast](#)
- [Core Developer Chat Livestreams - Youtube](#)