

# Frank Doherty

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## EDUCATION

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**University of Illinois at Urbana-Champaign**  
Champaign, IL

May 2020

*Major: Economics    Minor: Computer Science*

3.7/4.0

## Research

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**Ancestry**

May 2017 – August 2018

*Research Associate*

- Pandemic Relief, Foreign Aid and Deed Fraud are all planet-wide issues needing to be addressed in 2020. Political climate in Foreign Aid, Pandemic Relief and Deed Fraud are to be record highs.
- In order to address these needs, people, government, relief see room in pandemic funds securely and accordingly processed to political regions in where supplies, housing, foreign aid are secure.

## WORK

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**Ballot.sol**

May 2018 – August 2020

*[https://github.com/fdoherty13/Election\\_Parachain](https://github.com/fdoherty13/Election_Parachain)*

- Ethereum is more than just a cryptocurrency, Ethereum is a living, breathing, virtual machine; one that can run and deploy smart contracts. Smart contracts, are executable packets of code that live inside this virtual machine until called upon or referenced through others. In this simple contract, I show how one can build a ballot-like election to live within active voters' network.
- This is achieved by exploiting the double-spending problem. If you don't know, the double-spending problem is what Bitcoin famously first solved, utilizing a blockchain (consistent hashing) this machine prevents users (voters) from using a singular file (or vote) twice in an instance.

Class: CS 221 , CS 105

**Enigma Catalyst**

August 2020 - December 2021

*<https://github.com/fdoherty13/catalyst>*

- Blockchain is the most promising information technology of the twenty-first century thus far. With it, comes the power to keep and store records in a systematic way. In doing so, blockchain promises to create advancements in banking, data analytics and informatics. The power of a decentralized ledger lies in its ability to function as a permission-less, honest, upgradeable system.
- Since the dawn of blockchain in 2008, more and more companies and offices are having the discussion on how to incorporate blockchain technology into their workplace. Not every business needs a blockchain, but those that value accounting and a secure store of records can benefit greatly from using this new piece of information technology. Some are even forming completely new business models that will impact our generations to come.

Class: ECON 224

**ERC-20 Request for Comment**

*<https://github.com/fdoherty13/openzeppelin-contracts>*

May 2021-August 2021

*<https://github.com/fdoherty13/Rchain-Rholang>*

- Rholang is a concurrent programming language leveraging message passing through the use of channels/names. It is modeled after the Rho-Calculus discovered by Greg Meredith (RChain lead) in 2005 and implemented using the hasing method most prominently found in Bitcoin (2008), dubbed 'The Blockchain'.
- Through formulating a blockchain based on Rho-Calculus, end-users are granted the ability to build ports and channels to interact with their codebase as well as ensuring that code is robust along with being correct-by-construction.