

# Real Time Financial Transactions Using Lightning Network Protocol

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ELECTRICAL & COMPUTER  
ENGINEERING

## PROBLEM STATEMENT

Cryptocurrencies have a low transaction speed [1] that is too slow for retail use. The Lightning Network uses caching to handle more transactions.

## REQUIREMENTS

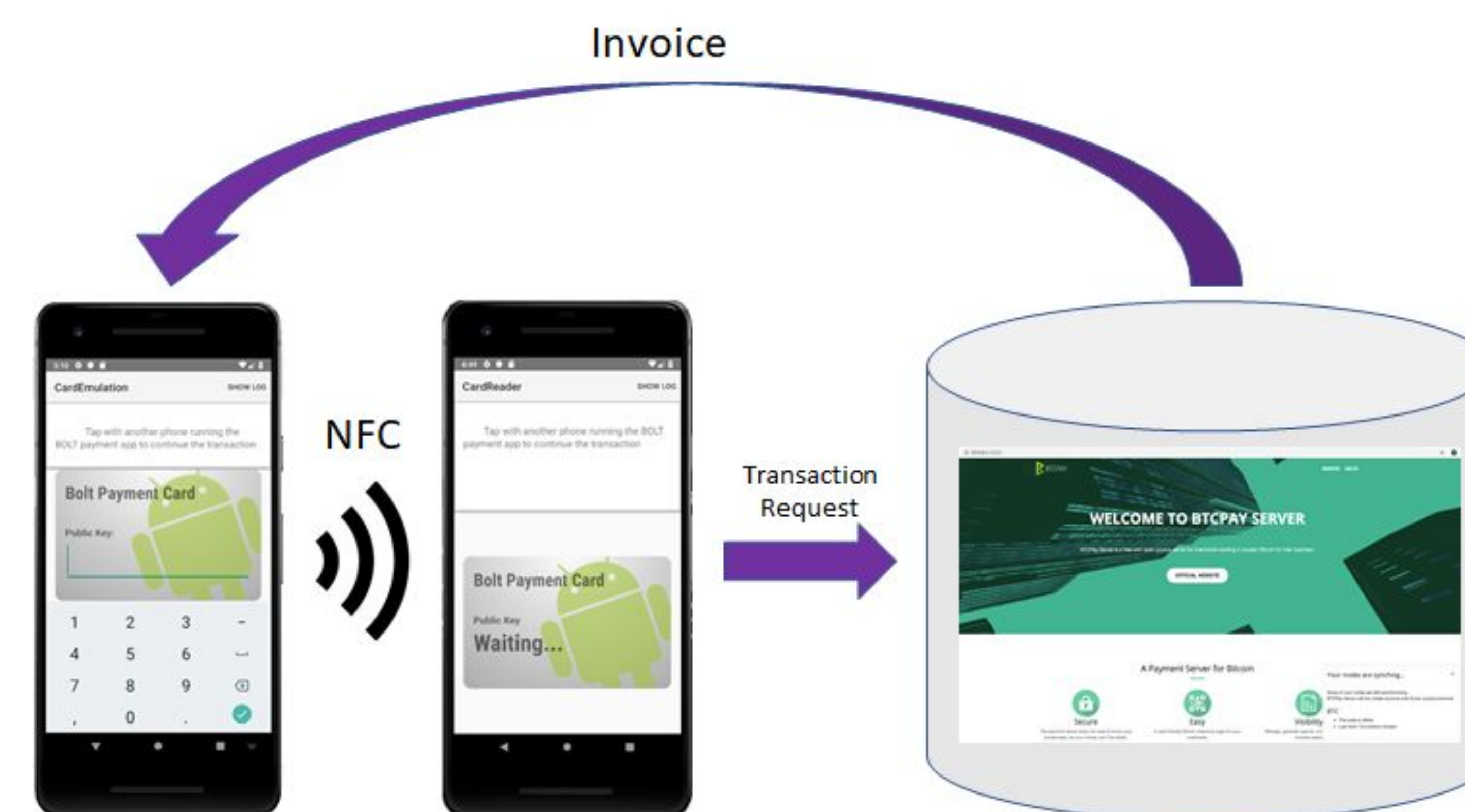
- App capable of using the Lightning Network Protocol to perform transactions
- Compatibility with POS systems for retail use
- Compatibility with other users of the app for personal use

## ACKNOWLEDGEMENTS

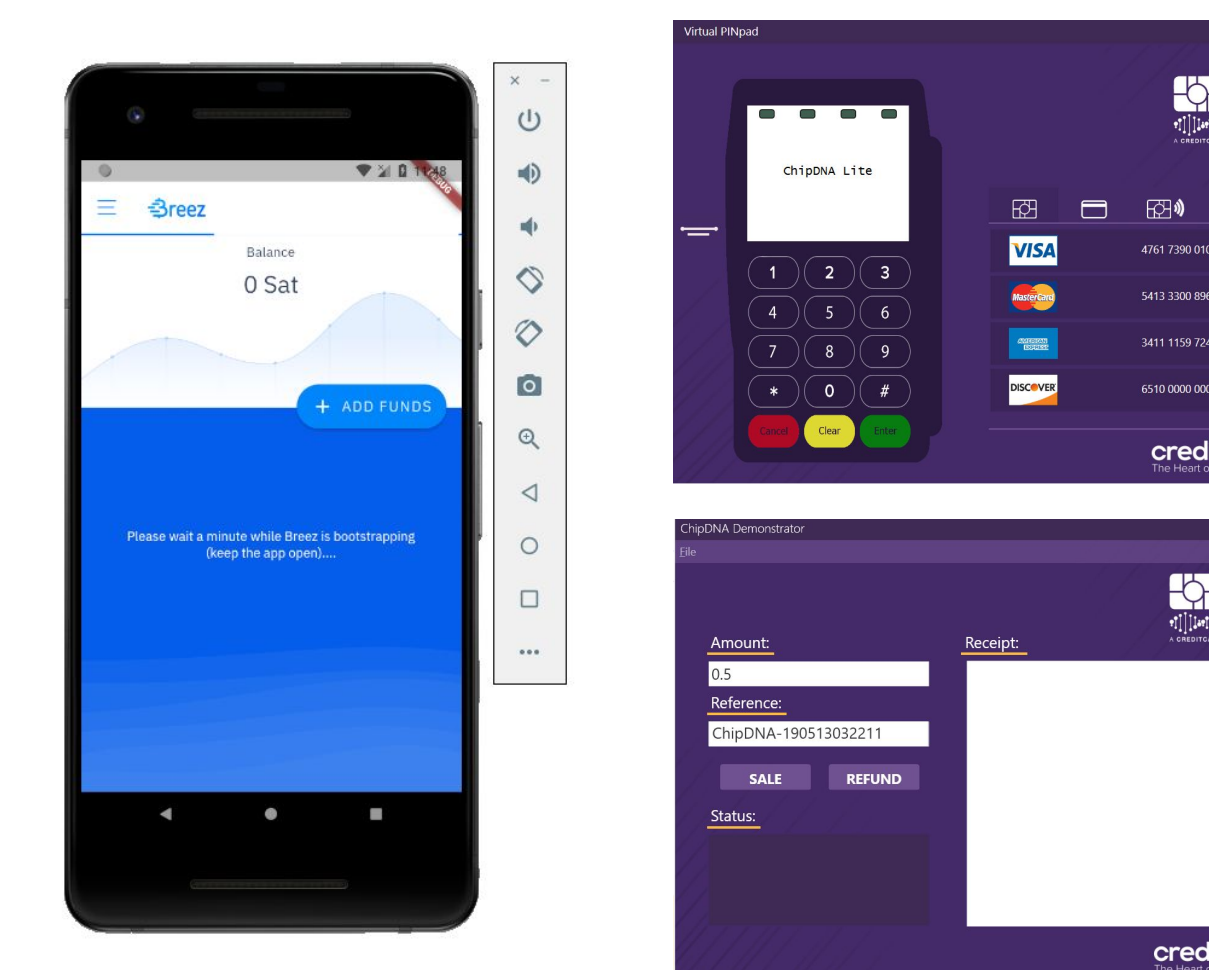
Junhua Chang: Lightning Network LLC

James K. Peckol: UW ECE

## IMPLEMENTATION



- Build Point of Sale (POS) Android app
- Build and setup BTCPayServer
- Configure cloud services to host server
- Synchronize the entire blockchain
- Build NFC compatibility
- Explored:
  - Chip DNA
  - Breezmobile
  - Azure Cloud Services



## CONCLUSION

The goal of this project is to implement a POS app that uses the Lightning Network protocol for faster cryptocurrency transactions. We approached this project by building an Android app that has NFC compatibility and is configured with BTCPayServer. We learned that creating a design specifications document and writing good code documentation helps.

## FUTURE WORK

- NFC-compliant payment terminal
- App for iOS devices

## REFERENCES

[1] "Blockchain speeds & the scalability debate," Blocksplain, 07-Mar-2018. [Online]. Available: <https://blocksplain.com/2018/02/28/transaction-speeds/>

[2] Breez, [Online] Available: <https://github.com/breez/breez>