

Kyle Den Hartog

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Blockchain Engineer with a passion for identity, blockchain, and cryptography

Professional Experience:

Blockchain Engineer

Evernym, Draper, UT

December 2017 - Present

- ❖ Lead the development of DID Authentication and DID Authorization protocols using digital signature cryptography and zero knowledge proofs within the Hyperledger Indy community and broader Self-Sovereign Identity community
- ❖ Researched numerous blockchain based identity projects to identify viability of interoperability between Sovrin leading to a partnership with Ontology and Evernym
- ❖ Mentored a Linux Foundation intern for 6 months helping him architect and develop an Indy reference agent
- ❖ Created and actively maintain the Indy-Dev repository which is currently the easiest way for developers to work with Hyperledger Indy in a sandbox environment
- ❖ Worked with numerous internal and external parties to architect an interoperable protocol for peer-to-peer communication using DIDs that allows for better granularity of trust between peers
- ❖ Researched academic papers to identify cryptographic protocols that would help with the design of a p2p protocol

Information Security Engineer I

ProCircular Inc., Iowa City, IA

May 2016 - May 2017

- ❖ Programmed scripts, automated workflows, and improved business process efficiency to decrease vulnerability assessment times by 57.4%
- ❖ Conducted vulnerability assessments, external penetration tests, web application testing assessments, and red team engagements in an efficient manner allowing the company to reach profitability within 6 months
- ❖ Executed the creation of a product from concept to delivery for executive security awareness in 3 months
- ❖ Delivered on time custom client reports with documented analysis of findings, vulnerabilities, exploits, gaps, risks, and recommendations that could be easily interpreted by clients with a diverse set backgrounds
- ❖ Collaborated with sales during client meetings, represented ProCircular at conferences, and conducted demonstrations with potential clients to improve relationships which ultimately led to multiple SLAs being signed

Open Source Projects:

Rust - High Proficiency

- ❖ Lead development of functionality that goes in the IndySDK to easily pack and unpack messages while retaining provenance of the message using the JWE standard
- ❖ Assisted development of the libsovtoken plugin for IndySDK which enabled payment functionality for a token

Python – High Proficiency

- ❖ Contributed nearly 5,000 lines of tests and refactors to the development of a token plugin for Indy Plenum
- ❖ Made a python3 client API to communicate with the DIF universal resolver to resolve DIDs from blockchains

Java – High Proficiency

- ❖ Constructed a password manager using AES encryption and SHA512 hashing with open-source libraries
- ❖ Implemented a secure one-time-pad encryption scheme and the RC4 stream cipher scheme

Other projects

- ❖ Researched and drafted a framework to be used to quantify and compare a variety of identity systems
- ❖ Co-Authoring a paper at Rebooting Web of Trust analyzing the different implementations of Authentication and Authorization protocols that use DIDs

Group Affiliations:

Hyperledger Global Forum, Indy Agents Speaker

December 2018

Hyperledger Indy Technical Ambassador

June 2018 - Present

Decentralized Identity Foundation DID-Auth WG Chair

November 2017 - Present

ID2020 Summit, attendee

June 2017

Education:

University of Iowa, Iowa City, IA

May 2017

Bachelor of Arts in Computer Science