

Kyle Den Hartog

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Professional Experience:

Blockchain Research Engineer

Evernym, Draper, UT

December 2017 - February 2019

- Collaborated with community software architects and developers to formalize multiple community technical standards one of which was a standard message encryption format
- Contributed to the development of decentralized identifier (DIDs) authentication and authorization protocols using digital signature cryptography and zero knowledge proofs throughout the self sovereign identity community
- Researched several blockchain based identity projects to determine viability of interoperability with Sovrin which led to a public partnership between Ontology and Evernym
- Mentored an intern for 6 months helping him architect and develop the Hyperledger Indy python reference agent
- Created and continue to maintain the Indy-Dev repository which is currently the easiest way for developers to work with Hyperledger Indy-SDK
- Researched academic papers to identify cryptographic protocols that would help with the design of a p2p encryption protocol

Information Security Engineer I

ProCircular Inc., Iowa City, IA

May 2016 - May 2017

- Wrote scripts, automated workflows, and improved business process efficiency to decrease vulnerability assessment times by 57.4%
- Efficiently conducted vulnerability assessments, external penetration tests, web application testing assessments, and red team engagements to help the company reach profitability within 6 months
- Executed from concept to delivery a program for executive training on cybersecurity 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

- Led development in Indy-SDK to easily pack and unpack messages while retaining provenance of the message using the JWE standard
- Assisted development of libsovtoken plugin for Indy-SDK which enabled payment functionality for use with Indy Plenum token plugin

Python

- 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

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

Other projects

- Researched and drafted a framework used to quantify and compare a variety of identity systems
- Co-Authored a paper at Rebooting Web of Trust analyzing the different implementations of decentralized identifier authentication and authorization protocols
- Researched and provided recommendations for cryptocurrency token economic incentive models

Group Affiliations:

Hyperledger Global Forum, Indy Agent Speaker

December 2018

Hyperledger Indy Technical Ambassador

June 2018 - Present

Decentralized Identity Foundation DID-Auth WG Chair

November 2017 - February 2019

Education:

University of Iowa, Iowa City, IA

May 2017

Bachelor of Arts in Computer Science