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Will Ronchetti

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Education:
Brighton High School
Cornell CS Undergrad Spring 2018
Cornell CS Masters of Engineering Fall 2018

Computing Skills:

- Expert: Blockchain Technology, C, Operating Systems, TCP/IP Stack, Bitcoin, Tor
- Intermediate: Python, Java, Distributed Systems, Xen, OpenXT, UEFI, General Networking
- Some Experience: Ocaml, C++, x86 asm, Matplotlib, OpenEmbedded

Work Experience:

- **Software Engineer Intern, Assured Information Security** **Summer 2017**
  - Outsourced the xenstore to a stub-domain on OpenXT (Dom-0 disaggregation)
  - Integrated nested virtualization/guest UEFI support into OpenXT
- **Software Engineer Intern, Circadence Corporation** **Summer 2016**
  - Worked on a subsystem of a hybrid TCP/UDP transport protocol
  - Upgraded the SNMP agent for network hub monitoring
  - Configured an LVS-NAT Load Balancer in a CentOS test environment
- **Teaching Assistant, CS 4410/5430 (Operating Systems/System Security)** **Fall 2016-Present**
  - Hold office hours, teach review and other help sessions, handle grading logistics for certain projects as team lead, create auto-grading software etc.

Research Experience:

- **Anonymix - Secure, Anonymous and Distributed Bitcoin Transactions** **Fall 2016 - Present**
  - Implemented Anonymix, a distributed system of made up of users wishing to spend bitcoins anonymously down to the IP layer
  - Consists of an untrusted rendezvous server in addition to the core DC-Net protocol

Projects:

- **Proof of Stake Analysis**
  - Research project on academic and deployed Proof of Stake based blockchain protocols
  - Focused on Nxt, PeerCoin, BlackCoin, Ouroboros, Sleepy, Snow White
- **EzraCoinL** as part of the Security Practicum
  - P2P cryptocurrency and Venmo-like wallet app, written in Java
  - Features client side digital signatures of transactions on the app
  - Proof of concept implementation with a focus on usability
- **PortOS** as part of the Operating Systems Practicum
  - 6 part project written in C, 2 core thread projects, 3 networking projects, and the filesystem
  - Implemented the thread package and a basic FIFO thread scheduler, then upgraded the scheduler into a multilevel feedback queue scheduler and added alarms
  - Implemented variations of three networking protocols: User Datagram Protocol (UDP), Transmission Control Protocol (TCP), and Dynamic Source Routing (DSR)
  - Implemented a Unix File System
- **Text Adventure Game Solver** as part of the Artificial Intelligence Practicum
  - Implemented a text based adventure game engine in Ocaml based on a JSON schema
  - Created and solved our own games by implementing a solver in Python
  - Solver utilizes a combination of machine learning and the A* search algorithm to develop an optimal solution to the game by minimizing the number of moves
- **Miscellaneous Projects** through other courses or individual work
  - C - Chatserver, TCP Proxy, UDP Packet Sniffer, Queue Autograder, Encoder/Scrambler
  - Python - Anonymix, Flask Webserver, Tor Measurement Scripts, Brickbreaker, SMTP Server
  - Java - EzraCoinL, Parcel Delivery Simulator, Dijkstra's Algorithm
  - Ocaml - Texas Hold'em Engine, Ocaml Sub-Language Interpreter, Text Searcher, Enigma