# Roshan J. Rajan

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## EDUCATION

B.S. in Computer Engineering – December 2018

- *University of Illinois at Urbana-Champaign*, Illinois, U.S.
  - Courses: Distributed Systems, Data Structures, Algorithms and Models of Computation, Computer Systems Engineering, Database Systems, Programming Languages and Compilers, Computer Security

## WORK and RESEARCH EXPERIENCE

*Amazon* Software Developer Engineer Intern — Summer 2018

- Designed and implemented a Python dashboard service to manage internal processes
- Developed production level code and health monitoring to ensure scalability and maintenance of service
- Collaborated with project team to coordinate tasks for pipelined service from code to production

*Trustwave* Software Engineering Intern — Spring 2018

- Conceptualized and implemented alternate data storage method using Neo4j Graph Database
- Resolved security risk on document access in Elasticsearch and Kibana usage with Read-Only Rest
- Streamlined automated data retrieval and analysis using an Apache NiFi and Oozie integration

*NCSA* BDEEP Intern — Summer 2017

- Developed pipelined R Scripts to optimize model performance for accurate analysis of multiple datasets
- Collaborated with research team to maintain project specifications for model implementation
- Created a model development method to increase throughput for future team's model creation

*NCSA* SPIN Intern — Summer 2017

- Utilized TensorFlow Deep Learning objects for creating deep learning frameworks on the PYNQ Board
- Created Python and Bash scripts to automate user experience when developing new TensorFlow models
- Overcame resource limitations of the PYNQ Board to maximize model performance

*Northrop Grumman* Engineering Intern — Summer 2016, Winter 2016 - 2017

- Updated a 2003 VHDL/Verilog FalconEdge FPGA component to 2016 equivalent
- Redesigned IP Cores and developed self-checking testbench to promote future development
- Reprogrammed a PLL using an AXI Interface and IIC bus to control output clock frequency
- Communicated to develop thorough documentation for transceiver and receiver components

## PROJECTS

*Jump Genesis* – TokenSim (Awarded: 1st place) — April 2018

- Designed a new simulation tool to be used by cryptocurrency companies to develop token economies
- Worked with blockchain mentors and collaborated with my team to pitch TokenSim to Jump Capital

*Jane Street ETC* (Awarded: 2nd Overall and 3rd in Power Hour) — September 2017

- Programmed an AI to make High-Frequency Market exchanges based on a simulated market
- Formulated and analyzed various market exchange strategies to maximize returns

*SCC* – Student Cluster Competition Co-Captain at Super Computing Conference — Spring 2017 - Present

- Designing cluster configurations to deal with SC 17/18 HPC applications to optimize performance
- Leading the team to deal with planning strategy, accuracy and other constraints for SCC

## LEADERSHIP and ACTIVITIES

Student Cluster Competition Co-Captain — Spring 2017 - Present
Reflections Projections Speaker Chair — Fall 2015 – Fall 2016
Innovation LLC Peer Leader — Fall 2016 – Spring 2017
SIGPwny Member — Fall 2015 – Fall 2017

## SKILLS

Programming – C++, C, Java, Python, R, x86, HTML/CSS, Mathematica, CUDA, System Verilog
Technologies – Git, TensorFlow, AWS, MPI, Hadoop, NiFi, Oozie, Neo4j, Elasticsearch, Logstash, Kibana, MySQL