

# Anwesh Tuladhar

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## EDUCATION

- **University of South Florida** Tampa, FL  
*Ph.D in Computer Science; (Member of Tau Beta Pi)* January 2016 – Present
- **Kathmandu Engineering College** Kathmandu, Nepal  
*Bachelor of Electronics and Communication Engineering* August 2010 – January 2014

## EXPERIENCE

- **Synopsys Software Integrity** San Francisco, CA  
*Technical Intern* May 2018 – August 2018
  - Prototyped a client-side DOM-XSS vulnerability checker for javascript. Developed techniques to track possible dataflows through the DOM for the same.
- **University of South Florida** Tampa, FL  
*Graduate Research and Teaching Assistant* Spring 2016 – Present
  - **Transportation Security Research:** Conducted a study of the current cyber infrastructure involved in transportation by visiting the Transportation Management Center (TMC) and interacting with the engineers.
  - **USF Security Operations Center (SOC) Research:** Conducted an anthropological study to improve the efficiency of the SOC. Developed automation and network analysis tools. Deployed a honeypot to further our IoT research.
  - **Android Security Research:** Developed a language translator from Argus-Jawa (intermediate language) to Java for Argus-Amandroid.
  - **Teaching Assistant - Graduate Operating System:** Designed course projects for graduate operating systems course based on Yale's mCertikOS.
- **Deerwalk Services** Kathmandu, Nepal  
*Software Engineer* November 2013 – December 2015
  - **Data Analytics:** Developed webservices for medical and financial data analytics and report generation tools in rails with Elasticsearch as the primary backend database and MySQL as the secondary database.
  - **Scripting:** Developed file-scanner application using inotify kernel subsystem of Linux and integrated it with the web application. Developed python scripts to synchronize data between web application and accounting software.
  - **Application Deployment:** Deployed web applications on Amazon EC2 servers.
- **Deerwalk Institute of Technology** Kathmandu, Nepal  
*Instructor* December 2014 – December 2015
  - **Numerical Methods:** Planned and taught B.Sc IT Numerical Methods practical sessions.

## PROJECTS

- **Language Translator:** Developed a language translator from Argus-Jawa (an intermediate language used in Amandroid) to Java. The translation was based on heuristics applied to the Argus-Jawa AST and written in Scala.
- **Compiler Design for an Object Oriented Language:** Developed a complete compiler (including lexer, parser, dynamic dispatcher and code generator) for an object oriented language from scratch. Wrote the lexer and parser by hand as well as using flex/bison in C.
- **Twitter Hashtag Generator:** Implemented a sequence-to-sequence language model to generate suitable hashtags for a given tweet using keras.
- **Graph Data Processing:** Implemented and analyzed a generative model for network/graph generation described in the paper by Sendina-Nadal et al. using NetworkX.
- **VAST Mini-challenge 2017:** Led the team for mini-challenge 1 where we developed a tool what processed transportation sensor data in Apache Spark into a graph and visualized it as a subway map using Processing3 and Tableau. Our team also got an honorable mention for mini-challenge 3.
- **Image recognition using CNN:** Built a convolutional neural network for image recognition using TensorFlow.
- **Yelp Datasets Challenge:** Developed a Spark application using StanfordNLP library to analyse businesses from Yelp dataset based on their user reviews, locations, and user communities.
- **Particle Simulation:** Optimized a simple serial particle simulator using 3 different techniques: OpenMP, MPI and GPU in the Stampede super computer as a part of Parallel and Distributed Systems course.

## TECHNICAL SKILLS

<b>Programming</b>	Java, Scala, C/C++, Python, ML, SQL, x86, bash, $\LaTeX$ , Flex/Bison
<b>Operating Systems</b>	Linux, MacOS, Windows, mCertikOS
<b>Security Tools</b>	Splunk, Wireshark, Nessus, Metasploit, Nmap
<b>Data Analysis &amp; Visualization</b>	Apache Spark, NetworkX, SNAP, Gephi, Processing 3, Tableau
<b>Development Tools</b>	Git, GNU Tools, Maven, IntelliJ, Vim
<b>Machine Learning</b>	Keras, TensorFlow, Weka, Stanford NLP
<b>Databases</b>	ElasticSearch, MongoDB, MySQL, MSSQL