Bofin Babu

Flat No : 106
Suraksha Sunflower,
Bilekahalli, Bangalore

(Ph)+91 9497118311
bofinbabu@gmail.com
https://www.bofinbabu.com

EDUCATION

BITS-Pilani Hyderabad Campus, Hyderabad, India   July 2013 - June 2016
(Integrated) Master of Engineering, Computer Science
Specialization: Information Security
- Selected as the Teaching Assistant(TA) for CS C313.

Mahatma Gandhi University, Kottayam, Kerala, India   June 2010 - April 2013
Bachelor of Science, Physics
- Concentrated on Computational Astrophysics and completed my final-year project on astronomical spectral analysis co-supervised by scientists from IUCAA.

EXPERIENCE

Software Developer Intern   **NVIDIA**
January 2016 - June 2016   Pune
Full-time intern in GeForce Experience(GFE) group. Worked on Win32 programming + Debugging, basics of Direct3D-12 application development and C++ Unit Testing with GoogleTest and Python. Designed and implemented a comprehensive unit + functional testing application for NVIDIA's game capture module.

SKILLS

Lexicon: C/C++, Python and Java(Intermediate).
Tools & Frameworks: Visual Studio, Git, Perforce, afl-fuzz, WEKA, Scikit-learn, Click modular routing, Google Test.
Operating Systems: Ubuntu, Debian, Windows family.

PROESSIONAL INTERESTS

IT- Developer Operations, Software Design and Development for Back-end. Full-stack Development. Applied Machine Learning. Data Mining and Analytics.

SELECTED PROJECTS

A Unit + Functional Test Application for Share (ShadowPlay): Designed and implemented a unit+functionality testing application for Nvidia's fast video capturing and sharing software called Share (previously known as ShadowPlay). The application is written as a standalone in C++ + GoogleTest and Python 2.7 and later integrated to an internal application.

DirectX12 FPS Test Application: Wrote an application to measure frame rates for Direct3D-12 GPU Benchmarking. The application is specific for Windows 10 platform and built using Microsoft's latest DirectX-12 APIs. Did this project during course of my Internship at Nvidia.

D2DImageViewer: Wrote a Image Viewer with slide-show functionality using Direct2D. The viewer supports all popular image formats. Did this project as a learning exercise, while at Nvidia.

Detection of malicious domain names using Machine Learning: Various families of malware use Domain Generating Algorithms (DGAs) to periodically generate a large number of domains names for malicious purposes. With one million top websites dataset from Alexa and about 10K DGA-domains generated with a couple of DGA's, I came up with a model that detect algorithmically generated domains. The Random forest classifier was used for the classification and evaluation gave an accuracy of 97.8%. The project made use of Scikit-learn for classification.

FilterPlus: A real-time content filtering extension for Google Chrome: Built an extension for Google Chrome which allows users to have easy control over what they wish to receive from a web page. Also build this extension in such a way that it remembers the choice of options made by the user for every URLs, thereby letting users create rules for websites they visit.

Automatic TV Show Highlighting : Wrote a Python program which outputs an excerpt of TV shows consisting of the highlighted parts of it.The main idea behind this program is, usually when something interesting happens during the show, the audio levels increase (up to a short period of time)from it's normal pattern due to the combined response of (live)audience. I measured those differences and cut the video properly (with transitions) to form the excerpt. Libraries used for this project include (but was not limited to) MoviePy, ffmpeg and NumPy.

A SaaS Testing approach based on crowd-sourcing(Research Project): In recent years the Software as a Service (SaaS) model of software flourished as organizations of different size and types are extremely interested in readily available business applications. Traditional SaaS testing methodologies in restricted environment is not sufficient to overcome SaaS challenges. In this research, I propose an efficient and cost effective SaaS testing approach using crowd-sourcing followed by some techniques of effective management of crowd, based on a case study.

Spectral Analysis using IRAF: The optical spectra is obtained from Sloan Digital Sky Survey(sdss server dr7), a project make a large part of the universe. IRAF(image reduction and analysis facility) is a product of the National Optical Astronomy Observatories (NOAO) and was developed for the astronomical community. I took fresh spectral data of galaxy clusters from sdss, plotted and analyzed them using IRAF.

OTHER PROJECTS

Implementation of FP-Growth Algorithm, Buffer Overflow attack exploration on Windows XP server, Man-in-the middle attack exploitation over HTTPS, Building a basic medical expert system shell using CLIPS, Frog in a matrix game using A * search and study on evolutionary fuzzing.

REFERECE

Linkedin profile: **https://in.linkedin.com/in/bofinbabu**
GitHub profile : **https://github.com/bofinbabu**
Featured on BITS-Pilani M.E InfoSec Flyer : http://goo.gl/BSC8BD

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