CHIRAG JAMADAGNI

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EDUCATION

National Institute of Technology Karnataka, Surathkal, India
Bachelor of Technology
Major: Computer Science and Engineering

GPA: 8.82/10
Relevant Courses: Data Structures and Algorithms, Operating Systems, Software Engineering, Distributed Computing Systems, Advanced Computer Networks

PROFESSIONAL EXPERIENCE

Full Stack Developer, Concat, Mangalore, India [8/15 – Present]

- Concat is an online platform which simplifies the process of finding and organizing engineering conferences.
- The application is currently available on the desktop and mobile suites.
- The platform is built with AngularJS, Django Rest Framework with PostgreSQL and is deployed on AWS.
- I contribute to every stage of the development lifecycle, from data and requirement analysis to deploying production quality code.

Student Trainee, Samsung Research Institute, Bangalore, India [5/16 – 7/16]

- Member of the SDK and Reference Applications team of the Tizen PF & Protocol division.
- Built a new default Voice Recorder Application for the Tizen OS.
- Added a circular image cropping module to the default Image Editor application of the Tizen OS.
- Actively took part in brainstorming sessions for possible patents.

Research Intern, MOOG India Technology Center, Bangalore, India [5/15 – 7/15]

- Designed a real-time, scalable multi-core scheduling algorithm for flight systems.
- Developed a Linux based, multi-core operating system for NVIDIA's Jetson TK1 chip.
- Verified whether MOOG's flight control could adapt to multi core architectures.

Systems Engineer Intern, Xerox, Bangalore, India [5/14 – 7/14]

- Developed test cases using Selenium and Liferay portlets to monitor servers and onboard new customers.
- Integrated Nagios system monitoring tool with the Xerox cloud portal.
- Worked on load balancing and redundancy mechanisms for Xerox data centers.

PUBLICATIONS

VirtTorrent: BitTorrent for Inter-VM File Distribution

- Authors : Chirag Jamadagni, Amita Ajith Kamath, K Chandrasekaran
- Conference : ICC 2016, University of Cambridge, United Kingdom
- Publisher : ACM Digital Library

Dynamic 3D Graph Visualizations in Julia

- Authors : Chirag Jamadagni, Abhijith Anilkumar, Kevin Mathew, Shashidhar Koolagudi
- Conference : SCSC 2016, Montreal, Quebec, Canada
- Publisher : ACM Digital Library

RESEARCH & PROJECTS

NetworkViz.jl
A Julia module to render graphs in 3D using ThreeJS and is tightly coupled with LightGraphs. This package was demonstrated at JuliaCon 2016 which was held at Massachusetts Institute of Technology.

Secure Chat
A web based, secure P2P messaging, file transfer and video conferencing tool which uses OTR encryption and SMP authentication.

GCPiN
GCPiN or Group Caching for Privacy in NDN (Named Data Networks) is a novel approach to securing the Content Store without sacrificing much performance.

Emulation on ORBIT Testbed
Integrated NS-3 with ORBIT, transferred a video file between two nodes, observed and analyzed the jitter, network performance and power consumption.

Wormhole Attack
Simulated a wormhole attack in ns-3.24. Modified the AODV routing protocol in order to induce the attack. This simulation has been released as a patch and can be found on the ns3 mailing list.

Process Scheduling
Built an adaptive process scheduler for nachOS and an adaptive round robin scheduler for multicore operating systems, like Barrelfish.

Bachelor Thesis
Aiming to improve the throughput in Wireless Networks by designing a new TCP variant which uses the concept of ACK Division, an attack proposed by Prof. S Savage (UCSD).

TDoS
TDoS or TTL Based Denial-of-Service Attack is a novel packet drop attack in computer networks which is easy to implement but difficult to detect. The source code can be found on my Github page.

Protocol
An online platform for sharing research papers and technical documents. Built using Django, Materialize and PostgreSQL.

Survey of Multicore Operating Systems
Comparing existing multicore operating systems on the basis of use, scheduling, inter core communication, network stack, etc.

VMSIM
VMSIM is a virtual memory simulator written in C++. It is primarily used to demonstrate page faults and compare difference page replacement algorithms.

NITK Grading System
Built an online grading system wherein faculty upload student grades, GPA is calculated and Grade Cards are sent to students. Built using Laravel, Bootstrap and MySQL.

TECHNICAL SKILLS

Languages: C, C++, CSS, Java, JavaScript, Julia, HTML, PHP, Python
Operating Systems: Android, Barrelfish, Linux (Debian), nachOS, Windows
DBMS: MongoDB, MySQL, PostgreSQL, SQLite
Familiar with: Android Studio, Eclipse, git, JavaScript libraries, jQuery, Liferay, Nagios, ndnSIM, NS2, NS3, R, XML

ACTIVITIES & ACHIEVMENTS

- Member of the Wireless Information Networking Group (WiNG). This group focuses on research in wired and wireless networked systems.
- I head the Crypt SIG at the Indian Society of Technical Education NITK Chapter.
- Third place at Fidelity Hackathon 2015.
- Finalist at Samsung R&D Hackathon 2015.
- Award for academic excellence in 12^{th} grade.
- I make open source contributions to ns-3 and Julia programming language.