

---

# Seyyed Ahmad Javadi <sjavadi@cs.stonybrook.edu>

---

Address: 117 Beach Street, Port Jefferson, NY, 11777  
Phone number: 631-974-6911

<http://www3.cs.stonybrook.edu/~sjavadi/>  
<https://github.com/sajavadi>

---

## RESEARCH INTERESTS

---

- Cloud Computing
- Performance Analysis and Modeling
- File Systems and Storage
- Operating Systems

---

## EDUCATION

---

**Stony Brook University, NY, USA**

*GPA: 4/4, 08/2014-present*

**PhD Student in Computer Science**

- Advisor: Dr. Anshul Gandhi (Assistant Prof.)
- Project title: Performance Interference Analysis In Multi-tenant Clouds

**Sharif University of Technology, Tehran, Iran**

*09/2010-09/2012*

**MSc in Software Engineering**

- Advisor: Dr. Rasool Jalili (Associate Prof.)
- Thesis Title: Analysis of Non-monotonic Property in Access Control for Pervasive Computing Environments

**Ferdowsi University of Mashhad, Mashhad, Iran**

*09/2006-07/2010*

**BSc in Software Engineering**

---

## COMPUTER SKILLS

---

- **Programming Languages:** C/C++, Java, Linux Shell Script, Matlab
- **Web Programming:** PHP, JSP, CSS, HTML, JavaScript, XML
- **Database Technologies:** MySQL, PostgreSQL
- **Cloud Technologies:** OpenStack, Amazon AWS
- **Big Data Frameworks:** Apache Hadoop YARN, SPARK
- **Benchmarking Tools:** Httperf, HiBench, CloudSuite, Stress-ng, Sysbench, RAMSpeed
- **Operating System:** Linux (Ubuntu, CentOS), Windows

---

## TECHNICAL AND RESEARCH EXPERIENCE

---

- **Research Assistant**, Stony Brook University, June 2015- present
  - Current project: Dynamic, interference-aware load balancing for cloud-deployed applications: Performance interference is one of the main challenges in multi-tenant clouds especially for dynamic web workloads that have stringent performance requirements. We have been working on novel load balancers that can automatically detect interference and re-balance workload in an interference-aware manner. Importantly, the load balancer will spin up new Virtual Machines (VMs), as needed, to handle severe interference without violating performance requirements. The current tasks are: running Cloudsuite benchmark; creating CPU, cache, memory, disk and network I/O load in the co-hosted VMs; modeling the application response time with interference; extending load balancing algorithm and proposing new scale out mechanism by considering interference. We will next extend Spark scheduler to take interference into account.
  - User-centric detection and estimation of performance interference: We designed a performance model, based on queueing theory and machine learning, to detect and estimate the amount of interference in multi-tenant clouds. The model allows users to estimate the true resources allocated to their application at any given time, without any assistance from the cloud provider or hypervisor. Our experimental evaluation results on an OpenStack cluster show that the proposed approach can estimate interference with less than 10% error for two popular cloud applications: (i) Apache web servers, and (ii) YARN.
- **R&D Employee**, Sharif University of Technology, April 2011 - August 2013
  - Design and implementation of transparent data encryption for PostgreSQL
  - Design and implementation of a label based access control model for PostgreSQL

---

## PHD COURSES PASSED AND PROJECTS

---

- **Operating Systems:** Implementation of the following 5 project assignments for JOS operating system: x86 assembly, boot loader; virtual memory; processes/environments; multiprogramming and fork; file system and shell.
- **Principles of Database Systems:** Implementation of a simple talent search system using three different techniques namely Datalog (using Flora-2 system), object-oriented extension of SQL (using PostgreSQL DBMS), and XML (using eXist-db and XMLSpy).
- **Network Security:** Passive and active network monitoring with tcpdump and Libpcap, plugboard proxy, developing a packet injector.
- **Fundamental of Computer Networks:** Experimental analysis on detecting server load using IPID field in the IP packet header.
- **Analysis of Algorithms:** Algorithm design assignments.

---

## PUBLICATIONS

---

- **Dynamic Interference-Aware Load Balancing**, S. A. Javadi, Himanshu Rajput, A. Gandhi, SOCC 2016 (accepted as poster).
- **UIE: User-centric Interference Estimation for Cloud Applications**, S. A. Javadi, S. Mehra, B. Reddy, A. Gandhi, IC2E 2016.

---

## HONORS AND AWARDS

---

- USENIX Annual Technical Conference (USENIX ATC '16) Student Grant, 2016
- Stony Brook CS Department Chair Fellowship, 2014