Sarang Joshi

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EDUCATION

Masters in Computer Science (GPA 3.56) **December 2018**
Virginia Tech
Thesis title : Critisearch: An online search interface for Scholarly Search

Masters in Computer Engineering (GPA 3.82) **September 2020**
Virginia Tech
Project Title : Renee: A toolchain to enable formal verification of ARM binaries

WORK HISTORY

Amazon, Software Development Engineer Dec 2021 - Present

- Recognizing and adopting best practices in software engineering, design, testing, version control, and documentation for SnS-CX (Customer Experience) team.
- Writing high quality code and developing software solutions for Amazon Retail.
- Solving technology and business problems by attacking their root causes**;**

Waketech Community College, Programming Instructor **Mar 2021 -Dec 2021**

- Designed the curriculum for the Introduction to Computer Science fundamentals CSC 120 course
- Conducted asynchronous online lectures and online coding sessions using Python and Google Colab
- Developed and graded take home assignments and projects.

HGS Digital, Full Stack Engineer Remote **Jan 2021-Apr 2021**

- Developed an automatic event-based screen recording application in Twilio Flex for recording call center agent screen activity.
- Designed and developed API's to support customer contact centers using Twilio communication API's.
- Developed serverless functions and Studio workflows in Twilio to migrate existing clients from legacy systems into Twilio.

Ellucian LP, Reston, VA **May 2020- Aug 2020**

- Developed a microservice for appointment scheduling for university systems.
- Developed REST API endpoints and front end React components for appointment scheduling.
- Developed a lightweight utility to gather data from incoming API requests and export to csv/json.

Graduate Research Assistant (Backend) **Jan 2017- Feb 2019**

Virginia Bioinformatics Institute, Virginia Tech

- Designed REST API endpoints for a web based epidemic forecasting system to handle simulation snapshots for flu and other infectious diseases..
- Developed an algorithm for manually partitioning, archiving and retrieving data from past simulations for handling 4.3 GB of data per simulation.

Graduate Research Assistant (Automation) **March 2019-April 2020**

Department of ECE, Virginia Tech

- Developed a toolchain using Python, ARM Specification Language and Radare2 to automate the translation and validation of disassembled code to target specification language in the theorem prover PVS.
- Translated Google Zircon and Linux kernel binary from disassembled code (0.2 million instructions) to target language in less than 4 minutes.

Yardi Software,, Software Specialist II, **April 2011-Feb 2013**

- Migrated data from legacy system of clients to Voyager 2.0 platform for real estate client data using ETL.
- Debugging, fixing and root cause analysis of problems of client cases for real estate software.

Accenture, Software Engineer **Dec 2009 -Mar 2011**

- Developed and maintained the database model for a repository to aggregate customer data from online surveys.
- Configured, installed and tuned client system for performance in Oracle databases and improved query performance.
- Performed end to end testing on the system after integration from various sources of data.

TEACHING & ADVISING

Instructor for CS 1044 **Summer 2015**

Department of Computer Science, Virginia Tech

- Designed the curriculum for the course for C++ Introduction.

- Conducted lectures for a class of 15 students.
- Conducted In-class coding sessions, In-class quizzes.
- Developed and graded take home assignments and projects.

RESEARCH EXPERIENCE

Graduate Researcher **Fall 2015 - Spring 2017**

Computer Science Department, Virginia Tech

- Developed an online search interface to assist users while performing scholarly search
- Conducted user studies on the search interface with graduate students.
- Literature review of user interaction while performing scholarly search.

Summer School **Summer 2018**

Stanford Research Institute, Menlo Park, CA

- Learning techniques based on formal logic, such as model checking, satisfiability, static analysis, and automated theorem proving.
- Learning tools for static analysis of code using the theorem prover Z3.

PUBLICATIONS

- **Scalable Translation Validation of Unverified Legacy OS Code**, A. Tahat, S. Joshi, P. Goswami, and B. Ravindran, International Conference on Formal Methods in Computer-Aided Design (FMCAD 2019), October 22-25, 2019, San Jose, California, USA
- **Four considerations for supporting visual analysis in display ecologies**, H. Chung, C. North, S. Joshi, J. Chen, 2015 IEEE conference on visual analytics science and technology (VAST), 33-40
- **Critisearch for Scholarly Search**, S. Joshi, Master's Thesis 2018, Virginia Tech
- **ThoughtSwap-ing for In-Class Discussions**, D. Stewart, Michael & Joshi, Sarang & Gautam, Aakash & Tatar, Conference: Conference on Higher Education Pedagogy 9

HONORS AND AWARDS

- VT GTA Academy of Excellence Fellow 2017-present
- BlockOne Blockchain challenge winner March 2018
- Virginia Tech intramural Billiards doubles winner Fall 2016
- Radford Invitation Billiards Tournament Runner Up Spring 2017