Arjun Kashyap

Contact Information

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Research Interests

My research interests broadly include Virtualization, Cloud Computing, and Storage.

Education

Ohio State University, Columbus, OH, USA
Doctorate of Philosophy, Computer Science Aug 2019 - Present

University of Wisconsin-Madison, Madison, WI, USA
Master of Science, Computer Science Sep 2017 - May 2019

National Institute of Technology (NIT) Trichy, Trichy, India
*Bachelor of Technology (*Honors*), Instrumentation & Control Engineering* July 2010 - May 2014

Research Experience

Graduate Researcher
Ohio State University (*Adviser: Xiaoyi Lu*)

- *Disaggregated storage: Studied and characterized NVMe over Fabrics (NVMe-oF) over different network protocols using Intel SPDK.*
- *Persistent memory: Analyzed Intel Optane DC Persistent Memory Module (DCPMM) to generalize persistent memory characteristics through micro-benchmarks and performed case studies to guide the design of storage systems.*

Professional Experience

Microsoft Corporation, Redmond, WA, USA
Software Engineer Intern - Azure Dedicated (Remote) May 2020 - Jul 2020

Microsoft Research Lab, Cambridge, UK
Research Intern June 2019 - Aug 2019

Microsoft Corporation, Redmond, WA, USA
Software Engineer Intern - Business Applications Group May 2018 - Aug 2018

Oracle India Pvt Ltd, Hyderabad, India
Senior Software Developer (Full stack development) June 2014 - Jul 2017

Papers and Conferences

1. **Arjun Kashyap**, Shashank Gugnani, and Xiaoyi Lu "Impact of Commodity Networks on Storage Disaggregation with NVMe-oF" (Under Review)
2. Shashank Gugnani, **Arjun Kashyap**, and Xiaoyi Lu "Characterizing Persistent Memory" (Under review - Title changed due to double-blind submission policy)

Projects

Azure VMware datacenter monitoring
Microsoft Corp. (Mentor: Amit Chattopadhyay) May 2020 - Jul 2020
Built an end-to-end pipeline to collect, analyze, and monitor VMware vCenter cluster metrics and host system logs for the software-defined data center running on Azure bare-metal nodes.

Augmenting the Visual Studio GateInsight tool

Microsoft Research - Cambridge (Mentor: Katja Kevic & Brendan Murphy) Jun 2019 - Aug 2019

Worked on the GateInsight tool in Microsoft Visual Studio which provides insight to developers about the feature toggles in the Office source code. The tool uses information collected from an analysis framework that finds all the feature toggles.

Trusted platform for edge compute nodes

UW-Madison (*Adviser: Prof. Suman Banerjee*) Sep 2018 - April 2019

Explored a mechanism via Trusted Platform Module for a cloud server and a client to verify whether the edge compute platform has been tampered with.

Study of Request-Routing in Content Delivery Networks

UW-Madison (Course: Adv. Computer Networks, with Prof. Paul Barford) Sep 2018 - Dec 2018

Performed a study of request-routing algorithms and mechanisms in CDNs, subject to varied network conditions. Discovered whether the request routing algorithms of a CDN actually determines the best edge server with respect to client perceived latency. [Code] [Report]

Evaluating Differential Privacy Mechanisms for Network Trace Analysis

UW-Madison (Course: Topics in Security & Privacy, with Prof. Justin Hsu) Sep 2018 - Dec 2018

Evaluated numerous differentially-private mechnanisms on the static network dataset at packet and flow-level granularities. Applied the continual counter to a stream of (live) network data to output *top-k items* without compromising privacy of the user. [Code]

Embedding a canvas component in a model-driven form designer

Microsoft Corp. (Mentor: Syed Adnan Ahmed) May 2018 - Aug 2018

Designed a framework to create canvas-based components in PowerApps to allow an application author/developer to use them out-of-the-box instead of creating a component from scratch.

Coordination server for SAFER Home

UW-Madison (Adviser: Prof. Suman Banerjee) Jan 2018 - May 2018

As a member of the Safer Home prject, designed a server in ParaDrop, an edge computing platform, which coordinates messaging and video streaming during normal and emergency situations. The project was selected for application development award in US Ignite. [Link]

Entity Matching using Machine Learning

UW-Madison (Course: Data Science, with Prof. AnHai Doan) Feb 2018 - April 2018

Performed entity matching of books from raw data of Amazon and GoodReads using Magellan. [Code]

Teaching Experience

Department of Computer Science & Engineering, OSU

- *Grad Teaching Assistant*, CSE 1222: Intro to C++ Aug 2020 - Dec 2020
- *Grad Teaching Assistant*, CSE 2331: Data Structures & Algorithms Aug 2019 - May 2020

Department of Computer Science, UW-Madison

- *Service-learning*, CS 402: Introducing CS to K-12 students Jan 2019 - May 2019
- *Project Assistant*, CS 639: Introduction to Software Security Jan 2019 - May 2019
- *Project Assistant*, CS 537: Introduction to Operating Systems Sep 2018 - Dec 2018
- *Project Assistant*, CS 640: Introduction to Computer Networks Jan 2018 - May 2018

Software Skills

Programming Languages - C, C#, C++, Java, Javascript, Python, SQL, TypeScript, MATLAB

Servers & Web containers - Weblogic, Tomcat

Web Technologies - HTML, CSS, NodeJS, Bootstrap, React, JQuery, RequireJS, Knockout

Databases - Oracle, MySQL

Coursework

UW-Madison

CS 537 Introduction of Operating Systems
CS 640 Introduction to computer Networks
CS 707 Mobile & Wireless Networking
CS 740 Advanced Computer Networks
CS 760 Machine Learning
CS 839 Data Science
CS 839 Topics in Security & Privacy

OSU

CSE 6431 Advanced Operating Systems
CSE 6341 Foundations of Programming Lanugages
CSE 5194.01 Intro to High-Performance Deep Learning

Other

Database Design
Information Security
Data Structures & Algorithms

Honours and Achievements

Application development award from US Ignite for SAFER Home project.

Conferral of the *First Class with Distinction* for Bachelors of Technology degree in NIT Trichy, 2014 (Requires a CGPA above 8.5 out of 10).

Granted *academic proficiency* prizes at NIT Trichy in 2012 and 2013 for being among the top 3 students in the department.

Achieved a rank 2/96 in Instrumentation & Control Engineering department in NIT Trichy.

Extracurricular Activities

Runner up in Table-Tennis in Annual Sports & Games 2011-2012 at NIT Trichy.

Manager of Pragyan Workshops team from 2012-2013 which organizes and conducts technical workshops for college students.