

Navdeep Singh

nanites.singh@gmail.com | 520.312.1354 | navdeep@cs.arizona.edu

EDUCATION

UNIVERSITY OF ARIZONA

MS IN COMPUTER SCIENCE

May 2018 | Tucson, AZ

Department of Computer Science

MM UNIVERSITY

BS IN COMPUTER SCIENCE

May 2014 | Haryana, India

Department of Computer Science

STANFORD UNIVERSITY

ONLINE COURSEWORK

Machine Learning

May 2012 - July 2012

Percentile: 96

SKILLS

PROGRAMMING

Over 10000 lines:

Java • C# • HTML • MySQL

Over 5000 lines:

C • C++ • CSS • Javascript • Swift •

Python

Familiar:

Unix • iOS • Android • \LaTeX • HDFS

Patterns:

ASP.NET • MVC • jQuery • ADO.NET •

Web Services • Windows Services •

Windows Workflow Foundation •

MapReduce • Jenkins • Git

COURSEWORK

GRADUATE

Advanced Operating Systems

Computer Security

Advanced Database Systems

Advanced Software Systems

Text Retrieval and Web Search

Analysis and Design of Algorithms

Computer Vision

Advanced Data Visualization

UNDERGRADUATE

Artificial Intelligence

Data warehousing and Data mining

LINKS

Portfolio:// paracosmo.com

Github:// [nanites](https://github.com/nanites)

LinkedIn:// [navdeep2](https://www.linkedin.com/in/navdeep2)

Quora:// [Navdeep-Singh-319](https://www.quora.com/Navdeep-Singh-319)

EXPERIENCE

AMAZON | SOFTWARE DEVELOPMENT ENGINEER

May 2018 – Present | Newark, New Jersey

Started working as a **Full Stack Software Engineer** at Amazon. Currently in the process of on-boarding.

GRADUATE TEACHING ASSISTANT | UNIVERSITY OF ARIZONA

Both assignments involved taking lectures and holding discussion sessions

Dec 2016 - May 2017 | Principles of Operating Systems

Aug 2016 - Dec 2016 | Unix and Systems Programming

INFOSYS LTD. | SYSTEMS ENGINEER

June 2014 – July 2016 | Pune, India

- Worked both within Infosys and its corporate clients.
- **Dot Net developer** involved in software development, automated testing, performance optimization, data structures utilizing object oriented programming, **C#, ASP.NET, XML, MVC, Entity Framework, SQL Server 2008, Visual Studio**. Worked both in **Agile and Waterfall** methodologies.
- Worked as a part of the development team to code, test, optimize and ship.

RESEARCH

ANTARES | CHIEF PROGRAMMER

May 2017 – Dec 2017 | NOAO, Tucson, AZ

Working as a **chief programmer and guiding an undergrad's honors thesis** on the development of a software infrastructure system to process alerts generated by the Large Synoptic Survey Telescope (LSST). Supervisor: Dr. Richard Snodgrass

IN-NETWORK CACHING IN HADOOP-NDN | RESEARCHER

Aug 2016 – May 2018 | Tucson, AZ

Focuses on Distributed Computing and Computer Networks. Worked with Dr. Chris Gniady to integrate novel networks (NDN) with Hadoop. Modified Apache Hadoop to run over NDN replacing traditional TCP/IP. Tools: **Java, MapReduce, Hadoop, NDN**

MISCELLANEOUS PROJECTS | UNDERGRAD

July 2010 – Present | Tucson, AZ

- Developed a part of IBM Watson using **Lucene and Stanford CoreNLP**.
- Implemented a color quantization image compression algorithm in **MATLAB**.
- Built an **iOS application** that determines if patient is eligible for TPA (Acute Stroke).

ACTIVITIES AND ACHIEVEMENTS

- **Microsoft Certified Professional** in .NET Technologies and CRM.
- Performed in the top 5 percent in the National Level Aptitude Test.
- **99 Percentile** - Info. Security Certification, **Eller College of Management**.

PUBLICATIONS

- [1] N. Singh and R. Dhiman. A survey on data aggregation and clustering schemes in underwater sensor networks. *Science Engineering Research Support Society*, 2014.
- [2] N. Singh and R. Dhiman. Fuzzy logic based clustering algorithm for network optimization. *International Journal of Systems, Control and Communications*, 2015.

RECENT PROJECTS IN DETAIL

ANTARES | CHIEF PROGRAMMER

May 2017 – Present | University of Arizona and NOAO, AZ

- The Arizona-NOAO Temporal Analysis and Response to Events System.
- Idea: Imaging surveys can compare images taken with an earlier reference. The difference between these images reveals the objects that have changed and each change can be thought of as a new alert.
- Worked on the development of a software infrastructure system to process alerts generated by astronomical time-domain survey programs.
- Supervised the architecture team of three developers. **(Guided an undergrads' honors thesis)**
- Also responsible for managing mysql database on cluster, code management, cluster, release and document management.
- Technology: **Python, MySQL, Git, Basic Unix commands.**
- Website: ANTARES

IN-NETWORK CACHING IN HADOOP ON NDN | RESEARCH ASSISTANT

August 2016 – Present | University of Arizona, AZ

- Developed a Network Caching Simulator for Hadoop running over NDN.
- Implemented most of the replacement policies such as ARC, LRU, LFU, LRU2, LIRS, MQ, TQ and OPT to explore and compare the caching potential at the network nodes.
- Hadoop Traces: Amazon EC2 running Intel Hi-Bench map reduce jobs on 128 nodes Hadoop Cluster.
- Computes the traffic going through each network node and the amount of cached data.
- Technology: **Java, Hadoop, MapReduce, Git, Amazon AWS, Perl, Intel Hi-Bench, Basic Unix Commands, Big Data.**
- Due for submission at INFOCOMM'18.

HADOOP ON NAMED DATA NETWORKING | RESEARCH ASSISTANT

August 2015 – July 2016 | University of Arizona, AZ

- Research focused on novel network protocols (Named Data Networking), operating systems, distributed computation.
- Worked in a team of two and modified Apache Hadoop to operate on an NDN network. Thus, replacing traditional TCP/IP.
- It demonstrated the feasibility of running an existing, large, and complex piece of distributed software commonly seen in data centers over Named Data Networking.
- Technology: **Java, Hadoop, MapReduce, Named Data Networking, Perl**
- Submitted and accepted at SIGMETRICS' 16 FALL

CLAIM INTAKE SYSTEM | SYSTEMS ENGINEER

July 2015 – July 2016 | Infosys, India

- Web Application based on Dot Net Framework
- Claim Intake system is a backend application and was designed for one of the largest insurance company in US.
- I was chosen for this job for my expertise in the area of **Dot Net MVC Technologies and MySQL.**
- Responsible for end to end development of modules from UI to Service Layer to Business Layer and finally the database entities to serve the UI components.
- Technology and Framework: **.NET 4.0, ASP.NET, MVC, Windows Workflow Foundation, Entity Framework, jQuery, HTML5, C, SQL Server 2008 R2 and IIS 7.5, VS2013, Rally, Agile, SVN, Jenkins, Web Services.**
- Also helped the testing team with Automated Testing (using SOAP UI) and Performance Testing (Load Testing using Visual Studio)

COMMERCIAL FINANCE SYSTEM | SYSTEMS ENGINEER

June 2014 – July 2015 | Infosys, India

- Windows Application based on Dot Net Framework
- Commercial Finance System is one of the back office servicing system for handling Commercial Financial business for one of the largest cars manufacturer in the world.
- Responsible for end to end development of modules from UI to Service Layer to Business Layer and finally the database entities to serve the UI components.
- After completion, was moved to testing team for Unit, Integration and Systems Testing.
- Technology and Framework: **NET 4.0, Waterfall, ASP.NET, jQuery, ADO.NET, C, SQL Server 2008 R2, VS2010, Sharepoint, Waterfall, Team Foundation Server, Windows Services.**

SELF SUMMARY

While my passion is computer science, I love to be outdoors, I play soccer every weekend, swim everyday and hike when I can.