

# Kartik Deshpande

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## EDUCATION

**State University of New York at Binghamton**, Binghamton, NY.

**August 2017 – May 2019 | GPA 3.67**

Master's of Science in Computer Science.

Courses: Distributed Systems, Cloud Computing, Computer Security, Design and analysis of algorithms, Operating Systems, Design Patterns, Programming the Web, Computer Architecture, Programming Languages.

**KLS Gogte Institute of Technology ( VTU )**, Belgaum, India.

**August 2012 - May 2016 | GPA 3.5**

Bachelor's of Engineering in Computer Science.

Courses: Data Structures and Algorithms, Operating Systems, System Software, Database Systems, Computer and Storage Area Networks, Formal Languages and Automata, Compiler Design, Object Oriented Programming and Modeling, Web Programming.

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## WORK EXPERIENCE

**The Research Foundation for SUNY, Research Assistant**

Binghamton, NY, **November 2017 - Present**

- Developed a Web project on Product Inventory system.
- Development and maintenance of research health forms , HTML/CSS , jquery, MySQL, PHP.
- Implement, monitor and maintain changes to web pages via CMS.

**Shreshta IT Technologies pvt ltd, Software Developer**

Belgaum, India, **June 2016 – June 2017**

- Built a Personalized secure Data storage application and file server with active directory integration using Kerberos.
  - Designed a Virtual Private Network software having remote access and site to site VPN .
  - Developed and Dockerized a Software Update distributed application, made it portable and cloud vendor independent.
  - Reverse Port tunneling for bypassing blocked or closed networks by establishing a tunnel between client and server.
  - Developed a Linux based Network Firewall and a Web Filtering software with a proxy server.
  - Implemented a failure recovery mechanism, to switch from one ISP to another, when one goes down via IP routing.
  - Developed web applications and RESTful APIs using Flask framework.
  - Also worked as a System Administrator managing networks, databases and OS with over more than 200 servers.
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## PROJECTS

**Fault tolerant Distributed NoSQL database ( *python, protobuf* )**

- Supports scalability and high availability by implementing eventual consistency. Data is automatically replicated on multiple nodes for fault-tolerance, implementing Read repair and hinted handoff methods from DynamoDB and Cassandra

**Movie Recommendation system ( *java, scala and C* ).**

- Java to provide a web based user interface (JSP), C to initially populate database.
- Scala integrated with Java to use Cosine similarity algorithm to match similarity of two users to rank movies.

**Distributed banking application using google's protocol buffer ( *python* )**

- Implemented a multi threaded Chandy–Lamport algorithm to capture global snapshots ( state of all branches ) by sending marker messages. The snapshot includes balance of all branches and the money in transit from one branch to another.

**Assembly Language Simulator ( *c++* )**

- Developed a pipeline simulator which supports Register, Memory and Control flow instructions by implementing out of order executions, register renaming and use of physical register and memory bypassing.

**WatchFS ( *python – FUSE, Django and flask* )**

- A software layer between the file system and the user which intercepts system calls and records the activities happening on the File System in real time and sends it to a remote server via flask REST API, developed in FUSE

**Twitter Sentiment Analysis with Apache Spark ( *pyspark* )**

- Implemented Naive bayes model to classify tweets into positive and negative categories with Spark's standalone mode.

**Other Projects**

- Distributed File Server with hash table ( *Python and Apache Thrift* ), Naive bayes classifier ( *java* ), RSA encryption based voting system ( *python* ), SSL client server communication ( *java* ), Crude document searcher ( *NodeJS, MongoDB, mustache templates* ), SDN based MAC learning controller ( *mininet, Pox, python* ), MLFQ Scheduler ( *xv6, C* ).
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## TECHNICAL SKILLS

**Languages :** Python, Java, C, C++, PHP, Shell Scripting, NodeJS.

**Software :** Git, Docker, Pycharm, IntelliJ, Eclipse, Trello, Vim.

**Database :** MySQL, Postgresql, MongoDB, Oracle, SQLite.

**Additional :** Google's protocol buffer, Apache Thrift, Apache and Nginx Web server, TCP/IP protocols.

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## ACHIEVEMENTS

- Won the best security hack project at HackBU 2018 ( hackathon at Binghamton University), the project was built in a span of 24 hours.
- Completed online courses 'Cyber Security' and 'Computer Networks' from edX and Coursera.