SAMARTH KULSHRESHTHA

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EDUCATION

- **Master of Science, University of Illinois Urbana-Champaign** **Aug '17 – May '19 [Expected]**
  Computer Science GPA: **4.0 / 4.0**
  Relevant Coursework: Distributed Systems, Advanced Distributed Systems, Data Mining
- **Bachelor of Technology, Manipal Institute of Technology** **Aug. '12 – May '16**
  Computer Science and Engineering, Rank: **1** out of 212 GPA**: 9.77 / 10.00**

COMPUTER SKILLS

- **Proficient:** C++, Java, C#; **Intermediate:** Python, Go
- **Tools and Technologies:** Microsoft Azure, Amazon Web Services, PostgreSQL, Git, Powershell, Bash

INDUSTRY EXPERIENCE

- **Software Intern – Distributed File Cache, NVIDIA, Santa Clara** **May '18 – Aug '18**
  - Implemented various features including APIs to query extended actions, checksum validation on warm GET, range read of objects, throttling of LRU eviction strategy, and migration of DFC APIs to the *Open API 3.0* specification (fka *Swagger*)
  - Enhanced the hashing performance by 90% by using an optimized version of *Rendezvous Hashing*
- **Full-time Software Engineer – Azure StorSimple, Microsoft, Bangalore** **Jun. '16 – Jul. '17**
  - Designed and developed a new cloud service, *Data Discovery and Insights*, to search and retrieve files stored across backups
  - Designed the schema for storing file metadata across tables to optimize for storage and transaction costs
  - Designed, implemented, and automated the infrastructure to test the *Hybrid Data Services* architecture
- **Software Engineering Intern – Azure StorSimple, Microsoft, Bangalore** **Jan. '16 – May '16**
  - Implemented the core logic for *Data Transformation Service* to trigger backups, clone and cleanup volume containers
  - Implemented the host agent which would estimate the workload for the execution phase
- **Software Engineering Intern – Azure StorSimple, Microsoft, Bangalore** **May '15 – Jul. '15**
  - Integrated *Azure Site Recovery* with *Azure StorSimple* to facilitate a one-click unified failover through *Azure Automation*, this enabled the two products to be pitched as an integrated end to end backup solution to the customers
  - Conducted performance analysis to identify bottlenecks involved in the import of StorSimple data to *Azure Blobs*, the results from this analysis laid the ground steps for a completely new standalone product – *Azure StorSimple Data Manager*

RESEARCH EXPERIENCE

- **Graduate Research Project, Decentralized Systems Lab, Advisor: Prof. Andrew Miller** **Jan. '18 – May '18**
  - Worked on the power-mixing algorithm, an integral component of a new fault-tolerant *Multi Party Computation* paradigm
  - Implemented an optimized batch Beavers Triple generation algorithm to be consumed by various MPC applications
- **Research Assistant, Parallel Programming Laboratory, Advisor: Prof. Laxmikant Kale** **Aug. '17 – May '18**
  - Worked on adding support for distributed section creation in Charmpy, a Python version of the Charm++ framework

PROJECTS

- **Scheduling for modern distributed systems**
  - Designed a class of scheduling algorithms achieving high throughput, low latency, balanced load, scalability and fault tolerance
  - Demonstrated its effectiveness through preliminary experiments and theoretical analysis
  - Awarded one of the *Best Research Projects* for *CS 525 – Advanced Distributed Systems* class
- **Distributed Graph Processing System**
  - Developed a fault-tolerant distributed graph processing engine from scratch, based on the Gather-Apply-Scatter model
  - Implemented in a modular way to allow writing various graph algorithms like Page Rank, Shortest Path, etc. with ease
- **Distributed File System**
  - Developed a fault-tolerant flat distributed file system with support for put, get, delete, list, and store operations
  - Implemented ring-based leader election and failure detection algorithms as well as ensured total ordering of all operations

OTHER EXPERIENCE

- **Founder – Free and Open Source Software for Engineering Education, Manipal** **Sep. '14 – May '16**
  - Recruited members to work on open source tools, managed the team, arranged funds for compensating members for their work, and provided regular status updates to IIT Bombay

AWARDS

- **Gold Medal and Award of Excellence** **Aug. '16**
  - Honored for securing the first position in the Computer Science and Engineering Class of 2016
- **GE Foundation Scholar Leaders Program Scholarship** **May '14 – May '16**
  - Awarded a scholarship in recognition of excellent academic achievement and future potential