SAMARTH KULSHRESHTHA

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EDUCATION

- **Master of Science, University of Illinois Urbana-Champaign, Illinois, USA** Expected Graduation: **May '19**
  Computer Science, Class of 2019 GPA: **4.0 / 4.0**
  <u>Relevant Coursework:</u> Distributed Systems, Advanced Distributed Systems
- **Bachelor of Technology, Manipal Institute of Technology, Manipal, India** **Aug. '12 – May '16**
  Computer Science and Engineering, Class of 2016 CGPA**: 9.77 / 10.00**
  <u>Rank:</u> **1** out of 212

COMPUTER SKILLS

- **Intermediate:** C++, Java, C#
- **Beginner:** Python, Go
- **Tools and Technologies:** Microsoft Azure, Amazon Web Services, git, Powershell, bash

EXPERIENCE

- **Software Intern – Distributed File Cache, NVIDIA, Santa Clara** **May '18 – Present**
  - Implemented various features including APIs to query extended actions, checksum validation on warm GET, range read of objects, and throttling of the LRU cache eviction strategy
  - Migrated the DFC APIs to the Open API 3.0 specification (fka Swagger) and generated a Python client
- **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
  - Abstracted various modules to support changes in the underlying database implementation
  - 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 amount of work 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
  - Conducted performance analysis to identify bottlenecks involved in the import of StorSimple data to Azure blobs
- **Summer Intern – Indian Institute of Technology Bombay, Powai** **May '14 – Jul. '14**
  - Implemented waveplots in Python to replace Ngspice plots for eSim, an open source EDA tool
  - Enhanced the GUI of Sandhi by upgrading it from Tkinter to PyQt

PROJECTS

- **Fulcrum:** A stateless scheduler for high throughput and low latency dynamic tasks implemented on top of Berkeley's Ray. Fulcrum performed better than the existing Ray scheduler and state of the art Sparrow scheduler.
- **Sava:** A fault tolerant distributed graph processing engine based on the Gather-Apply-Scatter model. Sava was implemented in a modular way to allow writing graph algorithms like Page Rank, Shortest Path, etc. with ease. In Sava, the Master and Standby Master coordinate the intermediate steps between the Workers.
- **SDFS:** A fault tolerant flat distributed file system with support for put, get, delete, and list operations. In SDFS, all writes to a file are totally ordered. All operations go through a Master which is elected using a ring based leader election algorithm. All nodes run a variant of a ring based failure detection algorithm and maintain a full membership list of every other participating node.

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, and provided status updates to IIT Bombay
  - Conducted bi-weekly programming sessions to help members enhance their programming skills
  - Set up a collaboration with Italian Mars Society to provide better quality projects for members to work on
- **Member – Parikshit Student Satellite Team, Manipal** **Oct. '13 – May '14**
  - Developed a module to compress the images captured by the thermal camera on board the nanosatellite
  - Implemented the compression module under severe memory usage constraints due to limitations on system memory

AWARDS

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