

EDUCATION

Master of Science, Computer Science

08/08/2016 - 12/13/2017

University of Southern California - Los Angeles, USA

GPA: 3.9 / 4.0

- Courses: Analysis of Algorithms, Foundations of Artificial Intelligence, Applied Natural Language Processing, Information Retrieval and Web Search Engines, Machine Learning, Deep Learning and Its Applications, Directed Research (Machine Learning Application)

Bachelor of Technology, Computer Engineering

08/01/2011 - 06/01/2015

Aligarh Muslim University - Aligarh, India

Cumulative Performance Index: 9.58 / 10 (Rank 5)

TECHNICAL SKILLS

- **Programming experience:** JAVA, JavaScript, C, C++, MATLAB, Python, HTML, CSS, JSP and Node.js.
- **Technologies / Tools:** Apache Spark, SQL, NoSQL (Aerospike, Redis and DynamoDB), Bash, Git, Vim, LaTeX, Spring framework, Lombok, Mockito, Apache MINA, NGINX, Quartz Scheduler, Elasticsearch (Logstash and Kibana), Scikit-learn and Tensorflow.

WORK EXPERIENCE

Software Development Engineer

Amazon - Seattle, WA, USA

02/05/2018 - Present

- **Components of S3 Billing system:** Redesigned and implemented several components of Amazon S3's billing system from scratch for new features and performance improvements. Developed a framework and several apps to run using that framework.
- **Apache Spark based application:** Ported existing application components to Spark based applications. These applications process several petabytes of data per day with improved performance, better stability and support new customer use cases.
- **Custom Queries on S3 Objects:** Developed spark sql based application to query on several petabytes of data present as S3 objects for collecting some statistics for new customer use cases.

SDE Intern

Amazon - Seattle, WA, USA

05/16/2017 - 08/04/2017

- **Debugging Console:** Built a web application to aggregate data from dynamoDB tables, state machines and other background processing services and display their processing status along with debugging information to help troubleshooting these services.
- **Message Publisher:** Developed a web tool to collect and publish data to a message queuing service for further processing.
- **API Clients:** Created client libraries to access databases, workflow services and other 3rd party service APIs.

Software Engineer

Paytm (One97 Communications Ltd.) - Noida, UP, India

06/15/2015 - 07/29/2016

- **Pre-Auth / Capture flow:** Implemented Pre-Authorization and Capture flow for Credit Card transactions allowing customers to authorize payment and merchants to capture payment separately.
- **Message Translation Web Server:** Developed a real time financial message translation application capable of handling more than 1000 requests per second.
- **SQL Database to NoSQL Database Data Migration Application:** Made a multi-threaded application capable of migrating over 10,000 records per second.

PROJECTS

- **Multi-Speaker Recognition and Speaker Specific Question Answering System** (2017): In this project, a text independent multi-speaker recognition system and speaker specific question answering system was developed where people can ask question and get answers specific to their knowledge. Python, MATLAB
- **Snipe** (2017): Snipe is an application which can help identifying suspicious activities like person carrying a gun, trying to shoot someone, or actually shooting someone and inform the police regarding such events. Built and pitched at Cal Hacks 4.0. C++, Python, OpenCV, NEC Sound Recognition APIs, Microsoft Cognitive Services APIs
- **Doneth** (2017): Decentralized blockchain application to allow donating cryptocurrency to Refugees using Ethereum network. Built and pitched during dAppathon organized by BCG Digital Ventures and DVolution. Truffle framework
- **Hindi News Categorization and Summarization** (2017): Developed an application which utilized deep neural networks to categorize and summarize news articles. Python
- **Modeling 3D-spatiotemporal dynamics of hierarchical cell division** (2015). GUI application for computational modeling of decision making in stem cells. **Published** in Journal of Modeling and Simulation (JoMS), <http://joms.kpublishinggroup.info/>. C++, Java, MATLAB, Python
- **BioMetric Data Acquisition Application** (2014). GUI application for Face Detection/Extraction, Recognition and Fingerprint Detection/Extraction using OpenCV and Qt library. Used by AMU for biometric data collection. C++, Qt
- More at <https://pratikvarshney.github.io/> and <https://bitbucket.org/pratikvarshney>

ADDITIONAL EXPERIENCE AND AWARDS

- "Best Presentation Project Team" award for Deep Learning. (2017)
- "Amazon Echo Dot" prize for developing Alexa Skills. (2017)
- "Best Use of NEC API" award at Cal Hacks 4.0 (2017)
- "LA Hacks Top 4 - 11" award out of 150+ Teams at LA Hacks. (2017)
- "Most Viable Startup Hack" award at TrojanHacks 2.0, USC. (2017)
- Grader for "Foundations of Artificial Intelligence" at USC. (2017)
- **1st prize** in Gang Wars (2-Player turn based game) AI Competition against 61 agents held at USC. (2016)
- Winner of BlackBerry 10 App Challenge organized by Devworx. Won BlackBerry Z10 Smartphone and Playbook. (2013)