Neha Sharma

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Education

MS, Computer Science, Courant Institute, NYU, New York *Jan 2017 – Dec 2018*
- CGPA **3.9/4. [**Distributed Systems, Adv. Algorithms, Adv. Machine Learning, Adv. Network Architecture, OOP Design]
- Teaching Assistant for 3 Courses - Fundamental Algorithms, Data Structures, Java Programming

B.Tech, Material Science, Indian Institute of Technology Roorkee, India *Aug 2006 – June 2010*
- CGPA **8.4/10,** Dep. Rank- **4 [**Data Structures & Algorithms, C++ Programming, Discrete Mathematics, Database Systems]
- Linux System Administrator & Software Engineer for Campus IT services team

Languages/Tools

- **Languages**: Java, C, C++, Golang, Scala, Python, R, SQL, PHP, JavaScript, NoSQL, XML
- **Frameworks/Tools**: Hadoop, Spark, AngularJS, JSP, Spring, Hibernate, Informatica, MATLAB, NS3, AWS, Git

Professional Experience

Software Engineering Intern, **Newswire, Hackensack, New Jersey** Sep 2018 – Present
- Incoming full-stack development intern working in web, social and mobile platforms
- Using PHP, Python, JavaScript frameworks, SQL, third party APIs and other tools in an Agile/Kanban environment.

Software Developer, **WNS Global Services, Gurugram, India** Apr 2015 – May 2016
- Built Linear & Logistic Regression model, K-Means Clustering, Decision Trees to analyze and profile customers
- Significantly reduced runoff for a mortgage portfolio by conducting creative feature engineering using R, Python
- Secured contracts from clients in USA, Australia; submitted time series models for CCAR and DFAST stress testing

Software Engineer (DevOps), HSBC Global Technology, Pune, India Jul 2014 – Feb 2015
- Developed a continuous integration & deployment system using Git, Jenkins, Chef, Docker, Kubernetes
- Wrote Shell & Python scripts for automating requirements generation & testing

Software Developer (Full-Stack), **Wipro Technologies, Pune, India** Jul 2010 – Jul 2014
- Built a JSP UI in a Spring MVC framework as part of a full stack software development of an Online Banking product
- Extensively used Core Java such as Multi-Threading, Exceptions, and Collections to implement the business logic
- Used Hibernate for object mapping to the Relational Database in backend

Academic Projects

Fault-tolerant Sharded Key-Value Store (Distributed Systems)
- Implemented **Raft** consensus protocol from scratch in **Golang**; required extensive multi-threaded programming
- Built a scalable, distributed, fault-tolerant, sharded key-value store on top of this raft implementation
- Enhanced it to facilitate configuration changes over time and load-balancing by shifting shards among replica groups

Online Learning with Large Expert Spaces (Advanced Machine Learning)
- Surveyed literature to find best online learning algorithms for scenarios when experts are paths in a graph
- Implemented and validated *Component Hedge* algorithm in **Python** for additive loss scenarios and an extension to the *Follow the Perturbed Leader* algorithm in **C++** for tropical (Edit-Distance) and rational (BLEU score) losses
- Proved better generalization bounds & lower computational complexity as compared to batch learning algorithms

TOR – Improvements in Congestion Control (Summer Research Project)
- Analyzed TOR's design to understand causes of its high latency and implemented an alternate design (hop-to-hop UDP, end-to-end reliability & congestion control) in ns3 using **C++** in an object-oriented architecture
- Demonstrated improved performance on several metrics like time-to-first-byte, time-to-last-byte and download time

Author Identification from small text (Foundations of Machine Learning)
- Utilized Python libraries – **NumPy, Pandas, NLTK, scikit-learn** for creative Feature Extraction (Style based, POS based, Sentiment based, TF-IDF based features) as part of a project for identifying author using short excerpts
- Achieved high accuracy (~85%) for different multi-class classification algorithms- Tree Ensembles (Gradient Tree Boosting, XGBoost, Random Forest) and multiclass decomposition (multiclass SVM for one-vs-one)

Academic Achievements

- Scored within top 0.1% students in IIT-Joint Engineering Exam 2006 (All India Rank-2737) as well as AIEEE 2006, India
- Rewarded for obtaining 100 percent in Mathematics in 10th standard by State Government.