ABIN SHAKYA

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EDUCATION

Louisiana State University, PhD in Computer Science [Aug 2021 – Present] CGPA: 3.85
Tribhuvan University, Bachelors of Engineering in Computer [Aug 2013 – Oct 2017] CGPA: 3.6

SKILLS

Programming Language : Python, C++, C, JavaScript
Frameworks/Libraries.   : Django, DRF, Flask, TensorFlow, Keras, OpenCV, Pandas, NumPy, Matplotlib, Redis, RabbitMQ
Celery, Amazon S3, MATLAB, Angular1
Tools/Technology/DB   : PostgreSQL, MongoDB, Nginx, Apache Hadoop, Apache Spark, Sentry, Postman, SOAP UI, Latex

WORK EXPERIENCE

Graduate Research Assistant
Louisiana State University

Aug 2021 - Present
Baton Rouge, LA

- Construction of Deep Learning Based Potential Energy Models using DeepPMD kit.
- Building a deep learning package for many-body potential energy representation and molecular dynamics
- Visualization of multidimensional COVID data using parallel coordinate plot (d3.js)

Software Engineer
Khalti Digital Wallet, Sparrow Pay Pvt. Ltd.

Oct 2017 – Sep 2021
Kathmandu, Nepal

Development
- Full Stack Development (Python/Django/Angular) for a fintech company with a user base of 10+ million
- Development of Middleware system named Khalti Service Layer for providing consistent RESTful APIs
- Work on both REST and SOAP APIs to integrate Flight Booking System, Hotel Booking System, Movie Ticketing System and Bus Ticketing System.
- Integration of Third-Party APIs from multiple vendors (ISPs, DTH, Insurance, Electricity, etc.)
- Code base refactoring (Migration from Django 1.x to Django2.x)

Security
- Involvement in penetration testing to explore vulnerabilities in the system (Usually of side products)
- Implement AWS s3 uploads using pre-signed URL generations.
- Implement a dynamic API throttling layer to prevent DOS attacks
- Implement DES3 encryptions with nonce for API authentication to prevent replay attacks

Optimizations and scalability
- Re-architecture entire Python/Django 2.2 code base to allow space for scalability
- Optimization of Flight Search Engine using multi-threading concept (Implementation of AsyncIO)
- Use of Lazy Query Evaluations for Database Query Optimization
- Use of Redis caching technique to optimize Flight, Hotel, Bus searches

Research Assistant
NAAMI

Dec 2020 – Jul 2021
Kathmandu, Nepal

- Research on Visual Localization for application on autonomous driving and virtual reality.
- Research on Soft Contrastive Learning for visual Localization.

Software Engineering Internship
Leapfrog Technology Pvt. Ltd.

Feb 2017 – Sep 2017
Kathmandu, Nepal

- Build Real-Time Stock Data Analysis System using Python/Django/d3.js
- Mentored for final year Engineering Project: Real Time Stock Market Prediction using Neural Network.

PUBLICATIONS/POSTER PRESENTATIONS

- Real-Time Stock Prediction Using Neural Network, 8th International Conference, Confluence 2018| IEEE | 978-1-5386-1720-5 (ISBN Number)
- Stock Prediction using Neural Network | Poster Presentation | Kelaniya International Conference on Advances in Computing and Technology University of Kelaniya, Colombo, Srilanka 2017

AWARDS, ACTIVITIES AND RECOGNITIONS

- **NASA Emerging Worlds Research Grant**, Computer Science, LSU, 2021/22
- **Full Scholarship in Engineering:** 26th Rank in Engineering Entrance Examination (From a pool of 15000+ applicant)
- **Microsoft Student Partner :** Appointed as Microsoft Student Representative for Pulchowk Campus, TU
- **Event Organizer:** International Django Girls Workshop, 2016
- **Participation**: National Level Mathematic Olympiad