Hrishikesh Singh

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Experience

Indian Institute of Technology, Roorkee **Feb '24 – Ongoing**
Machine Learning Researcher - *AMSC | Deep Learning,* ***Python*** *Hybrid*
- Working on *Machine learning in Computer vision & Image processing*, and explainability of black box models using *Explainable AI (XAI)* methods in collaboration with Dr. Millie Pant (HoD-*AMSC*).

Coding Ninjas **May '23 – Sept '23**
Technical Consultant | Python, Java *Gurugram*
- Migrated the existing monolithic Python RestAPIs into microservices based APIs using FastAPI and NoSQL(*MongoDB*).
- Desiged *Introduction to* ***Python***, *Data Structure and Algorithms* and *Design Patterns Course* for career camp program undertaken by 3000+ engineers and final year students.

Independent Contract **Aug '20 – Dec '21**
Software Engineer | ***Python****, Java* *Remote*
- Worked on interesting engineering problems based on SDLC while capitalizing on 7+ robust technical toolkit, including Python, Deep Learning, FastAPI, Django, Springboot, Git, AWS, Cloud Deployment, and MySQL, to create and deliver top-tier solutions, making significant contributions to few clients projects.

Google Summer of Code **May '18 – Aug '18**
Software Engineering Intern | Java *Remote*
- Mentor : *Dr Mangus Knuth*, HTD DBpedia Association
- Worked on an enhanced *Table of Content Extractor* for *WikiMedia Datadump* generated by conversion of conventional Semantic data (XML/JSON) format to *Resource Description Format* (RDF) following *OWL standards*.
- Created DBPedia Ontology based *Langauge resources*(*NLP Interchange format*) via URIs, IRIs extraction from unstructured Wikipages. Improved the extracted resources for *Linked Data Access* and *SPARQL Queries*

Indian Institute of Technology, Delhi **May '17 – Jan '18**
Machine Learning Research Intern | ***Python*** *New Delhi*
- Research Advisor : *Dr K. K. Biswas*
- Developed a Question answering system from FAQs using Word-embeddings and *seq2seq* AM based on *LSTM Model*
- Used *Stanford Question Answering Dataset(****SQuAD 1.1****)* derived from Wikipedia Articles

Pacific Dynamics **Nov '17 – Jan '18**
Software Engineering Intern | ***Python*** *New Delhi*
- Worked with Simulation team to process the Stress Test Data a.k.a. Fatigue Test of full scale turbine blades.
- Designed a Brownian-motion and *Lattice-Boltzmann* Simulator for airflow drag parameters which reduced error-prone manual calculations.

Education

Jaypee Institute of Information Technology
Bachelor of Technology in Computer Science (Dean's List, ***SGPA 10/10****)* *New Delhi*

Publication

Empirical Analysis of Bitcoin Market Volatility Using Supervised Learning Approach **IEEE**
- Conference Paper on Financial Econometrics exploring the volatility in Bitcoin prices as measured using Regression.

Projects

Satelite Image Segmentation (GIS) | *Python, Deep Learning, Urban-Tech*
- Automatic multi-class segmentation and categorization of land cover for autonomous agriculture and urban planning.
- Implemented two different deep learning model architectures i.e. *U-Net(original)* and *U-Net with ResNet50* Encoder Backbone.

Blight Detection | *Python, Deep Learning, Agri-Tech*
- Developed a scalable and dependable solution for early blight detection and management in potato crops. Using image processing based deep learning algorithms, I developed a custom CNN model to classify different blight stages accurately.
- This model is deployed via a robust FastAPI interface, ensuring efficient inference and scalability. Leveraging *Google Cloud Platform* for deployment and *Docker* for containerization.

Technical Skills

Languages: Python, Java, C++, SQL
Machine Learning: Computer Vision, NLP, Feature Engineering, TensorFlow, Keras, Pandas, NumPy, OpenCV.
Frameworks & Technologies: FastAPI, Django, NoSQL, Docker, AWS, Spring Boot, Jenkins, PyTest, JUnit, Linux,
Developer Tools & Interests: Git, **Sphinx**, Atlassian (Bitbucket, Jira), IntelliJ, Algorithms, Data Strcutures

Extracurricular

- Gold Medal in National Mathematics Olympiad organized by CBSE
- Gold Medal in Delineation Competiton (District Level)