

GINNI GARG

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DOB- 1st January 1998

JEE Main : 8123 (231/360)

GATE : 2562

Department Rank : 4

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University Rank : 5

Grade	School/College	Duration	CGPA/%
B.Tech CSE	National Institute of Technology, Kurukshetra	2016 -2020	9.65
Grade 12	D. A.V. Public School, Kalanwali	2014-2015	91
Grade 10	D.A. V. Public School, Kalanwali	2012-2013	10

Projects

Scientist 'B' (Senior Software Engineer) @ CDOT, Delhi April 2024 - Present

- > **Three Factor OAuth Service:** Developed a scalable Microservice from scratch based on three factor of authentication JWT, TOTP and Digital Signature. Involves Client registration, Users registration, Locking User, Ngnix Gateway, HTTPs for SSL/TLS. Further app is deployed over K8, with pvc logging, autoscaling / load balancing using hpa. PVC storage never be full with logging as deletion of logs will follow automatically using FIFO after reaching defined threshold 80-90% of PVC storage space.

Tech Used : Flask, Docker, MySQL, K8, PVC, Ngnix, HTTPs, Ingress, Encryption using RSA.

- > **Open Source Key Management System (KMS):** Lead end-to-end KMS solutiong using Keycloak as User Mangement and Hashicorp Vault as Secret Key Manager. System involves three microservices, one is wrapper microservice to have single point of access to both keycloak and hashicorp-vault microservice resp. Two Factor Authentication using JWT and TOTP. Data can be stored from files or any other text in HashiCorp Vault as secret. PVC storage never be full with logging as deletion of logs will follow automatically using FIFO after reaching defined threshold 80-90% of PVC storage space. Two type of users "Admin and Normal Users", where admin users can do read/write both while normal users can do only read operations. Used Hashicorp Vault for secret storage as its more secure becoz of encryption compare to secrets of K8 which are simply base64 encoded.

Tech Used : Flask, Docker, MySQL, K8, PVC, Ngnix, HTTPs, Ingress, Hashicorp Vault, Keycloak.

- > **Call Data Records (CDR):** Project involves extracting all call histories for mobile number for a given time period. CDR works as middle software between client and TSP. All data is kept as encrypted. Self Designed SSLRestTemplate for HTTPs for client end. Enabled Authentication using AES 256 bits encryption and Hashing validation. Setup entire Testing Setup of CDR.

Tech Used : Java Spring, MySQL, K8, PVC, Ngnix, HTTPs, Ingress, Encryption using AES.

- > **Search Engine - Question Answering (NLP):** Developed a question answering system over provided data using RAG Pipeline, NLP, LLM. App is deployed over Hugging Faces Spaces.

Tech Used : Streamlit, Python, Hugging Face Spaces, T-5 model, FAISS.

Software Engineer - II @ SirionLabs, Gurugram

Dec 2022 - May 2023

- > **AutoExtractionPython:** Developed a highly Async Microservice Application to manage legal contracts of clients, which involves parsing data from pdf documents using OCR, then doing predictions for type of legal contract, NER for various MetaFields, Extraction of Title from Documents, Documents Cosine Similarity.

Tech Used: Flask, Spacy, NLP, Roberta, Regex, Pulsar, Python, Docanno, Model Training/Validation.

Software Development Engineer - 2 @ Otipy, Gurugaon

May 2022 - Nov 2022

- > **Inventory Management System:** Initiated an inventory service to manage cart checkouts with a high throughput over 2,000 transactions per second, utilizing Redis-lock as a distributed locking mechanism.
- > **Supplier Incentive:** Conceptualized and implemented an incentive mechanism based on their product quality, resulting in greater supplier involvement and enhanced product quality.
- > **Optimization of Data Retrieval:** Optimized the existing codes for faster data retrieval from databases thereby enhancing the key consumer APIs.

- **Warehouse Management System:** Automated warehouse management system to generate quick and decisive data for all stakeholders.

Tech Used: Django, SQL, Redis, Celery, Kafka, Pagination, Postman, S3, Debugging, Authentication

Software Engineer @ Arcesium (Remote)

Aug 2020 - May 2022

- **Carbon:** Worked on various Deshaw Finance Reports such as CAT, Fx and Wire Order. We build CAT Report from scratch which includes calculation of Back Office (BO) numbers which are given to Front Office (De-Shaw). Also includes various feature such Dividend Reconciliation, Total Swap Reset, Mandatory/Voluntary and Treasury Data. Tech used: ETL Framework, Flask Framework, Sqlite3 in-memory, YAML, Unicorn Server, Unit Test Cases, Authentication, Threading.
- **Independent Python Scripts:** Worked on various independent python scripts for various Clients - Morgan Stanley, Coinbase, Black Stone etc., which involves processing trading/crypto trading data as per their requirements and giving output in form of CSV and Excel.
Tech Used: ETL Framework, Flask Framework, Async Await Python, Python Scripting, Sqlite3 in-memory db, Postgres SQL, YAML, Unicorn Server, Unit Test Cases (For Sync and Async Python), Git, Gitlab, S3 Buckets, Authentication - Kerberos and JWT, JIRA, Debugging, Threading and Multi-processing.

Freelance Software/ML Engineer

- **Land Cover Classification using Satellite Images and Hybrid MLP-SVM Classifier**
Main objective of this project is to take satellite/Hyperspectral images of any area and then perform classification into different classes like - crop classification using Hybrid MLP-SVM Classifier.
Research Paper link : <https://arxiv.org/abs/2101.00214>
- **Covid Active Patient Tracking in User State Using GPS Locations of User**
Worked on building API's to Fetch and Store India's Active Covid State Wise Data into Database. Followed by retrieval API's for Active Covid Patient Data of User State using GPS Coordinates of User. Added Swagger API Doc for entire Application.
Tech Used: Echo (Go) Framework, Mongo DB, Heroku Cloud, Swagger Doc, Procfile.
- **Brain Tumor Segmentation and Detection using Ensemble Classifier**
Main objective of this project is to take MRI Images of brain, which are further segmented and classifier using ensemble classifier. Various technologies are used like Otsu's method is used for segmentation, feature extraction is done using PCA+SWT+GLCM, then segmentation is done using KNN+DT+RF ensemble classifier.
Research Paper link : <https://arxiv.org/abs/2101.00216>
- **Real Time Plant Disease Detection and Classification**
Research project based on Real Time plant leaf disease identification and classification using various techniques like ANN, K-means segmentation.
Research Paper link : <https://arxiv.org/abs/2101.00215>

Skills

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- ETL, Flask, Echo (Golang), Mongo DB, Git, Gitlab, Debugging.
 - Bootstrap, MySQL, Spring MVC, JPA and Hibernate, JIRA, K8, SSL/TLS.
 - Machine Learning, Image Processing, NLP, NER, FAISS, T-5, Regex, Streamlit.
 - DSA, C, C++, JavaScript, PHP, Angular Js, MATLAB.
 - IOT- Temperature sensor, Ultrasonic sensor, LED blinking experiment.

Achievements

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- Received two **Award of Academic Excellence** in First year.
 - **Member of Institution Innovation Council** under the aegis of MHRD's Innovation Cell established at NIT, Kurukshetra for academic year 2018-2019.
 - **Published 3 Research Papers** in reputed Journals/Conference.
 - In **National Level Science Talent Search Examination** secured **252 rank at National Level**.