VINEET KALGHATGI

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EDUCATION

University at Buffalo, The State University of New York — **Buffalo, NY**
Master of Science in Computer Science, GPA : **3.7/4** — Aug 2022 - Dec 2023
Coursework: Blockchain, Pattern Recognition, Analysis of Algorithms, Fundamentals of Programming languages, Data Intensive Computing, Data models and query language, Project Management, Information Retrieval

Dr. Ambedkar Institute of Technology — **Bengaluru, India**
Bachelor of Engineering in Computer Science and Engineering, GPA : **8.84/10** — Aug 2017 - Jul 2021

PROJECTS

Data Volume Reduction [Link](#) | Python, Django, SQLite, Next.js, React.js, Docker, AWS
- Spearheaded development of a cloud-based application, envisioned in collaboration with **IBM** and the **Enterprise Neurosystem Group** that filters datasets through metadata of individual files resulting in lower bandwidth usage
- Developed **UI components** that enabled users to select between 3 data source types, view and customize filters, analyze filter statistics, and a dashboard to view ongoing data fetching/processing
- Wrote a module that enabled seamless downloading, decompression, and indexing of datasets from diverse URLs, resulting in a robust API

Dev Diaries [Link](#) | Go, GORM, Gorilla/Mux, Docker, MySQL
- Engineered a high-performance backend for a **blog REST API** in Go following the **MVC** framework,
- Architected the database schema consisting of **6** tables in **MySQL**, ensuring the integrity of relations between entities, resulting in a **40%** decrease in query times
- Implemented **Bcrypt** password hashing and **JWT** authentication, improving security

Digital Menu Manager [Link](#) | Next.js, React.js, TypeScript, Node.js, Express.js, MongoDB
- Programmed an intuitive menu management system, simplifying digital menu updates for restaurant owners, averaging **250** monthly visitors
- Designed **custom reusable components** and an **authentication system** leveraging **Google Firebase** for secure login, signup, password retrieval and email verification

Retrieval Augmented Generation (RAG) Chat-Bot | Python, Apache Solr, Flask, React.js, Docker, Google Cloud
- Indexed **50000** documents to answer queries on **10** novels achieving fast retrieval with optimized search queries
- Leveraged **Large Language Models** to summarize retrieved documents achieving coherent responses
- Deployed **5 REST API microservices** facilitating faster integration and release

Inverted Index Search Engine | Python, Flask, Gunicorn, Google Cloud
- A search engine written in **Python (Flask)** leveraging an inverted index to rank documents on tf-idf scores
- Implemented **information retrieval** techniques to index a corpus of **5000** documents achieving sub **50 ms** latency

EXPERIENCE

University at Buffalo — **Buffalo, NY**
Research Assistant (NLP) — Feb 2024 - Present
- Integrated **sentiment analysis** capabilities into chat interface prototypes, to empower disabled individuals to engage effectively in conversations resulting in a **25%** increase in positive user feedback
- Developed custom mapping strategies to refine emotion labels, enhancing sentiment analysis predictions with a concise set of **6** distinct emotional categories
- Fine-tuned sentiment analysis models utilizing **Python, PyTorch** and **Large Language Models (BERT, RoBERTa)** to predict **6** nuanced emotion labels from conversational utterances

Tata Consultancy Services — **Bengaluru, India**
Software Engineer — Aug 2021 - Jul 2022
- Managed operations of CA PAM, a privileged access manager, for a leading Swiss bank, resulting in smooth operations for over **4000** clients
- Collaborated with cross-functional teams from EMEA, APAC and AMER regions in resolving security issues that occurred during server onboardings. Utilized **SQL** to generate reports offering valuable business insights.
- Mentored colleagues, imparting expertise in server integration workflows, **Bash** scripts, and **Python** scripts, boosting team skill levels by **30%** and decreasing troubleshooting time by **40%**
- Optimized onboarding processes of HPiLO servers in bulk with **Python** scripts, leading to an outstanding **85%** reduction in processing times

Tata Consultancy Services — **Bengaluru, India**
Software Engineer Intern — Jul 2020 - Aug 2020
- Externalized data from Cucumber feature files with **Java** to a **MongoDB** Database resulting in centralized storage and a **45%** reduction in duplicated testing data
- Built a dashboard with **Angular**, **Typescript**, **Node.js** and **Express.js** providing an interface for data management that eliminated redundant CSV files
- Innovated an advanced automation tool using **HTML**, **CSS**, **JavaScript**, and **Flask (Python)**, streamlining mobile app testing processes and saving the QA team **10** hours per week

SKILLS

Languages:	Python, Javascript, Typescript, Go, C++, Java, Bash
Web Technologies:	Django, Flask, React.js, Next.js, Node.js
Database:	MySQL, PostgreSQL, MongoDB
Technologies/OS:	Docker, Git, Linux, Kubernetes, Kubeflow, Kafka, gRPC, Google Cloud Platform