VIVEKANANDA BHARUPATI

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PROFESSIONAL SUMMARY

Data Engineering & Machine Learning Specialist with expertise in **Python** automation and scalable **ETL architectures**. Experience engineering high-performance pipelines processing **1.1M+ records** and deploying **Deep Learning models** with **99% accuracy**. Focused on building production-ready cloud infrastructure (GCP) and optimizing data retrieval systems for security and analytics applications.

EDUCATION

University of Illinois — Springfield, IL
Master of Science in Computer Science — *December 2025*
- Relevant Coursework: Data Mining, Big Data Analytics, NoSQL Databases, Machine Learning, Data Visualization.

CMR Technical Campus — Hyderabad, India
Bachelor of Technology in Computer Science and Engineering — *July 2023*

TECHNICAL SKILLS

Languages: Python, R, SQL, C++
Data Eng: ETL, Scrapy, Selenium, Flask, BS4
Cloud/Tools: GCP, Git, Docker, Linux, VS Code
AI/ML: TensorFlow, Keras, Scikit-learn, CNNs
Analysis: Pandas, NumPy, Matplotlib, Seaborn
Databases: PostgreSQL, MySQL, SQLite

PROJECTS

Movie Watchlist: Full-Stack Web Application | *Python, Flask, SQLite, SQLAlchemy*
- Developed a scalable full-stack web application using Flask blueprints to manage and track personal movie collections.
- Integrated secure user authentication via Werkzeug security and established persistent data storage using SQLite ORM.
- Designed responsive, mobile-first front-end interfaces using Jinja2 templating engine and custom Bootstrap themes.
- Implemented RESTful APIs handling CRUD operations, ensuring efficient data transfer between client and server.

AnimeMatch: NLP Recommendation Engine | *Python, Beautiful Soup, SVD, NumPy, Pandas*
- Engineered robust web scraping scripts using Beautiful Soup to extract and structure large-scale anime datasets for analysis.
- Implemented SVD and Cosine Similarity to solve cold-start problems and enhance relevance for user profiles.
- Automated data cleaning using Pandas to handle missing values and standardize textual inputs for model training.
- Optimized sparse matrix calculations using NumPy vectorization, improving real-time recommendation speed by 40%.

Malware Detection via Deep Learning & Image Processing | *Python, TensorFlow, Keras, CV*
- Engineered a pipeline converting raw binary executables into 2D grayscale images for advanced computer vision analysis.
- Built a custom CNN architecture achieving $>$99% accuracy across 25 malware families, surpassing standard models.
- Proved unscaled inputs reduced loss by $\sim$4% compared to rescaled data via rigorous comparative validation testing.
- Automated feature extraction for polymorphic threats, successfully eliminating the need for manual feature engineering.

CERTIFICATIONS

Google Cloud Fundamentals: Core Infrastructure – Coursera
100 Days of Code: Python Pro Bootcamp – Udemy (In Progress)
AI For Everyone – DeepLearning.AI / Coursera
Foundational Math for ML – LinkedIn Learning
Using Python for Automation – LinkedIn Learning

LEADERSHIP & ACTIVITIES

Technical Head (Prev. Executive Member) | *The Lexis Club, CMR Technical Campus* — July 2020 – April 2023
- Directed technical initiatives and social media campaigns, driving a 20% increase in student event participation.

Executive Member | *CodeOHolics (CodeChef), CMR Technical Campus* — Dec 2021 – July 2022
- Organized competitive coding hackathons and mentored peers in complex algorithmic problem-solving techniques.