Lucky Verma

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EDUCATION

University of Maryland, Baltimore County — Baltimore, USA
Master of Science in Computer Science - **GPA: 4.0** — May 2023
Relevant Coursework: Algorithms, Databases, Machine Learning for Data Science, Malware Analysis

SRM University — Chennai, India
Bachelor of Technology in Electrical & Electronics Engineering - **GPA: 3.9** — November 2021
Relevant Coursework: Object Oriented Programming (C++), Statistics, Mathematics, Databases

SKILLS & CERTIFICATIONS

Languages/ Libraries: Python, C++, HTML, CSS, NumPy, Pandas, OpenCV, Sklearn, XGBoost, NLTK, Matplotlib
Platforms: AWS, GCP, Jupyter, GitHub, MS Excel, Microsoft Office, Google Suite, Slack, Discord
Database/ BI Tools: SQL, MySQL, PostgreSQL, Tableau, Looker, TimeScaleDB
Modeling Techniques: Decision tree, Random forest, NLP, Forecasting, Regression, Classification, Boosting

WORK EXPERIENCE

Graduate Research Assistant, ***University of Maryland, Baltimore County*** — Baltimore, USA | January 2022-present
- Developing tools for data analysis using CV & ML, building a web app for a Data Science learning platform

AI Specialist III, ***Vast Dream Group*** — Sydney, Australia | January 2021-Aug 2021
- Identified and translated client requirements into tangible deliverables - use cases, functional specs, & workflows
- Built recommendation engine leveraging BART for zero-shot classification fine-tuned for MNLI dataset using fairseq
- Conceptualized an AI architecture and launched an agent to produce quantifiable measurements for the Optics industry
- Managed and supported deals that added revenue of more than $1 million in the revenue pipeline

Full Stack Developer, ***TandM Techlabs*** — Bangalore, India | Jan 2020-December 2020
- Researched current trends in ML/AI space specifically leveraging Google Cloud Platform services
- Implemented Geospatial Data sciences leveraging Pandana(USDT toolkit) to perform accessibility metrics and shortest paths, using contraction hierarchies for discovery engine that was cached on Redis and containerized using Kubernetes
- Developed a POC project to demonstrate route optimization using Valhalla & OSMnx on PostGIS

Full Stack Developer, ***Self Employed*** — Mumbai, India | June 2018-August 2021
- Delivered a chatbot for a client on a conversation flow with integrated crypto payments dealing with web3.py APIs
- Developed a custom version of Moodle Learning Management System for an EdTech client & deployed it on the cloud
- Developed REST APIs in the Django framework for a Fintech Client recently acquired by Swipe

PROJECTS

Portfolio Optimization *(Python, TimescaleDB, Django, CVXPY, Hierarchical Clustering, Risk Parity, Mean Risk, CVar)*
- Implemented portfolio optimization and quantitative strategic asset allocation on the Indian Stocks Market (NSE).
- Built investment portfolios based on convex programming methods using CVXPY with risk metrics.
- Built investment strategies that outperform the benchmark(NIFTY50) returns 3x in backtesting in the rolling window.

Invoice Information Extraction *(Python, CV, CNN, Docker, AWS, PyTorch, OCR)*
- Developed an end-to-end application that processes invoices & extracts all relevant information as JSON.
- Fine-tuned Yolo by transfer learning on a 10k invoice dataset to achieve a precision of 82% with a mAP@0.5 of 0.6
- Tested and deployed the app using Docker & AWS S3 on an EC2 instance with a scheduler to serve the broker.

Document Classification *(Python, ML, CNN, CV, NLP, BERT)*
- Leveraged text and layout information to identify the scanned document type with 2-D layout and image embeddings integrated into the original BERT architecture from Faster R-CNN to work together for classification task
- Built an end-to-end app that scans the text by Tesseract OCR, processed data is embedded by text and positional information fused with Faster R-CNN layout layers to achieve state-of-the-art results having an accuracy of 99%

University Recommendation System *(Python, BART, FastAPI, Docker)*
- Deployed a microservice that served to match of candidate's profile with the University of his research interests
- Conducted zero-shot text classification by transfer learning the BART base model and gained an accuracy of 96%

Eye Dream *(Python, Tensorflow, CV, AWS)*
- Designed and developed the distance estimation using triangle similarity & TensorFlow object detection API
- Collaborated and implemented this distance calculation on React native app serving data points to an S3 bucket

Driving License Data Extraction *(Python, ML, Feature Engineering, Linear Regression, XGBoost)*
- Developed a transfer learned Yolo model to perform object detection and achieved an 0.746 mAP@0.5 for all classes

Mobility GIS Analysis *(Python, OSM, PostgreSQL, PostGIS, Pandas)*
- Analyzed OSM's geodata to understand necessary impact by weights & points of interest from the network graph
- Pre-processed, visualized, updated the geospatial data to PostGIS layered PostgreSQL database server to serve data for real-time routing and discovery services, incorporated GraphML data for route optimization

LEADERSHIP & INVOLVEMENT

- Winner of HackUMBC#2021, University of Maryland, Baltimore County in Best Docker App category
- Vice Chairperson, Versio SRM University - Led a unit of 100+ students, executed 15+ projects, launched a website, and built relationships with 20+ colleges to organize intercollegiate events