# Nitin Appiah

+13802139817 | nitinappiah@gmail.com | LinkedIn | Google Scholar | Github | Website

## EXPERIENCE

**Analyst, Hexion Inc, Columbus, OH** 07/2023 - Present

- Lead a team of data scientists and analysts for building time series forecasting tools.
- Accomplished financial demand planning **time-series forecasting** using Python, achieving a **3% MAPE score**.
- Constructed Python modules, released with **wheel, Azure CICD**, and containerized using **docker** images.
- Utilised **Lakehouse** architecture - **Data Factory**, **Databricks**, **Spark SQL, Synapse** to build **ETL** workflows.

**Research, Ohio State University, OH** 10/2021 - 05/2023

- Piloted 2 research projects - Traumatic Brain Injury (TBI) and Alzheimer's patient record analysis.
- Automated scoring of drawings done by Alzheimer patients using **OpenCV** and **ResNet** models.
- Boosted RMSE, F1 scores by over 15% by adapting **XGBoost** for TBI rehab outcome modeling.
- Journal Publication: Archives of Rehabilitation Research and Clinical Translation.

**Technical Intern, Synopsys Inc, Mountain View, CA** 05/2022 - 08/2022 & 02/2023 - 05/2023

- Devised models using **H2O.ai** to optimize adaptive network hardware scaling, reducing cost by 25%.
- Utilized **Python multithreading** to optimize data migration, reducing time from 40 to 5 hours.

**Computer Vision Research, Anna University, India** 02/2020 - 03/2021

- Developed a **distributed ResNeXt** model for pneumonia classification from X-ray images in **PyTorch**.
- Implemented a **Federated Learning** distributed setup and improved accuracy by 30%.
- Published and represented a research team of 4 at *MIT IEEE Conference 2021*.

**NLP Research, Anna University, India** 02/2020 - 11/2020

- Extracted **FastText, BERT, and TF-IDF** embedding (**NLP**) and fine-tuned for classification using **PyTorch**.
- Achieved 20% increase in F1 score by introducing **semi-supervised** training with 10 million samples.
- Spearheaded the research and presented a poster at *COLING 2020*.

**Computer Vision Internship, Vue.ai, India** 05/2019 - 01/2020

- Created an intuitive **ReactJS** app for image segmentation, and category labeling of 15,000 images.
- Constructed **PyTorch pipeline** and benchmarked different **CNN architectures** against 25% label error.

## EDUCATION

***The Ohio State University***, USA - Masters in Computer Science (GPA: 3.9/4) 08/2021 - 05/2023

Thesis research in machine learning for bioinformatics application

**Courses:** Machine learning, Neural Networks, Distributed Computing for Deep learning, Reinforcement Learning

***Anna University***, India - Bachelors in Computer Science (GPA: 8.9/10) 08/2017 - 05/2021

**Courses:** Algorithms and Data Structures, Object Oriented Programming, Data Science, Databases

## TECH SKILLS

| | |
|---|---|
| **Languages:** | Python, C, C++, JavaScript, Java, SQL, LaTeX, SHELL |
| **Framework/libraries:** | OpenCV, PyTorch, Tensorflow, Keras, pandas, Scikitlearn, matplotlib, wandb |
| **Tools/ Infrastructure:** | Git, Slurm, Nvidia GPU - CUDA, Linux, GenAI, transformers, RAG, PowerBI |

## PROJECTS

**LLM Agent** | Python, LLM, LangChain 06/2024

- Optimized **LLM** model for academic paper review co-pilot, using **Databricks DBRX foundation model**.
- Implemented a multi-**agent** LangChain model to research the internet, reducing 75% of reviewers' time.

**Parallel Computing Benchmarking** | *C, OpenMP, CUDA, MPI, Slurm, Horovod, wandb* 08/2021 - 04/2023

- Surveyed 3 parallelisms - thread, process, and GPU using POSIX threads, **OpenMP, MPI, and CUDA**.
- Achieved a scaling of 20x by hybrid parallelism with MPI+OpenMP on 5 processes and 1024 threads.
- Implemented semi-sync *AllReduce* and reduced neural nets training time by 10% compared to sync.

**Object detection For UI Element Detection from Sketch** | *Python* 06/2020

- Improved IoU by 32% with **YOLOv4** models for UI **object detection** from hand-drawn design sketches.
- Published working notes at 11th CLEF conference 2020, Thessaloniki, Greece.

## PERSONAL ACHIEVEMENTS

1st in Facebook Global Hackathon winning a cash price of $5,000 10/2019