# AKHIL RAJ

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## EDUCATION

**Cornell Tech (Cornell University)**, New York, NY                                                   Summer 2024
*Master of Engineering in Computer Science* (Merit Scholarship)
**Relevant Coursework:**               Data Science in the Wild - A+, NLP Research(Independent Study) - A+, Computer Vision - A

**Indian Institute of Technology Kharagpur**, Kharagpur, India | GPA: 3.78/4.00(WES)                    May 2020
*Integrated BSc/MSc in Mathematics and Computing*(Merit Scholarship)
**Relevant Coursework:**               AI, Statistics, Programming and Data Structures, Data Analytics, Design and Analysis of Algorithms, Deep Learning

## TECHNICAL SKILLS

**Programming Languages**:      Python, Java, C,  C++, GoLang, MATLAB, Google AppsScript
**Web Technologies**:      HTML5, CSS3, ReactJS, NextJS, TailwindCSS, JavaScript and ES6, TypeScript, AWS Cloud(EC2)
**Frameworks / Libraries**:      PyTorch, OpenCV, Playwright, RAG. Additional Knowledge : Electron, Apache Spark, Keras, CUDA, Hadoop
**Databases**:      MySQL Database. Additional Knowledge : Weaviate, Supabase
**APIs**:      Snowflake APIs, Amazon Redshift APIs, FacebookAds APIs, Tally APIs, Amazon Athena APIs
**Other Technologies/Tools**:      Git Source Code, Temporal, Vim, Linux Shell, Docker. Additional Knowledge :  Kubernetes(containerization)

## EXPERIENCE

**Cornell Tech and Weill Cornell Medicine (Collaboration), NLP Researcher,** New York, NY                    October 2023 - Present
- Achieved **90.22%** accuracy with **NN DeID**, pioneering text anonymization on a new medical dataset using **TAPAS** & **RoBERTa**
- Increased the efficiency of model training by more than **66%** on **Weill Cornell Medicine's** private medical dataset of about **15 million** rows of data
- Increased the number of text anonymization **NLP** pipelines by **50%**, utilizing **Python, PyTorch**, **Pandas, TailwindCSS, ReactJS, NextJS**

**Cornell Tech, Startup Studio - RapidReview, Tech Lead,** New York, NY                    November 2023 - March 2024
- Made the research process **30%** more efficient by coordinating a team of **4** to create a product which made the Literature Review Process **2-5X** faster
- Improved research papers' processing speed by about **38%** by building a queuing system using queuing and concurrency
- Tech stack used : **ReactJS**, **Python**, **Weaviate**, **Supabase**, **AWS, RAG**

**Amigo Softcom LLP, Founding Full Stack Software Developer,** Gurugram, India                    June 2022 - September 2022
- Led a cross-functional team of **10** to boost the ETL pipeline count by **50%** by transferring data to Google Sheets using data source APIs
- Implemented **GoLang** data extraction with **Temporal** for service orchestration, **MySQL**, **Electron** framework, **CI/CD**, and data source **APIs**
- Reduced the client-side latency of frontend by **33%** by reducing rendering count in **ReactJS** and **Google AppsScript**
- Single-handedly made the testing process **10X** quicker by automating the manual testing process of **ETL** pipelines using **Microsoft Playwright**

**HumaneAI PVT. LTD., Founding Full Stack Software Developer,** Bangalore, India                    May 2021 - May 2022
- Led the company through **3** strategic pivots, adapting to market dynamics, customer feedback, and technical challenges
- Lead the founding team of **4** developers to spearhead the **ideation, planning, and execution** of an advanced billing automation system
- Played a pivotal role in developing the product from concept to Proof of Concept (POC) stage. Infra Tech Stack : **Android Studio** and **ReactJS**

**IBM, Full Stack AI Developer,** Bangalore, India                    August 2020 - April 2021
- Enhance client's VNF placement efficiency by **28%** by integrating **Optaplanner** constraint solver to develop **rightsizing** models
- Made the manual process of mapping regulatory documents **10 times** more efficient by automating it with NLP models to ensure compliance
- Tech stack and architectures : **Java, ReactJS**, **Carbon**, **Python**, **pandas, AlBERTa, DeBERTa, Transformers**

**Fractal Analytics, Computer Vision Researcher,** Mumbai, India                    Summer 2019
- Enhanced **object detection** mAP performance by **8.39%** on Fractal's internal dataset over a dataset of more than **28000** images
- Enhanced the number of Object Detection pipelines by **30%** by incorporating state-of-the-art **Deep Learning** models
- Reduced annual cost to the client by **13,000 USD** using Computer Vision based pilferage detection product
- Tech Stack and Architectures : **Python**, **PyTorch**, **Tensorflow**, **Jupyter**, and **Numpy**, **RCNN**, **FCOS**, **RetinaNet**, **YOLO**

## ACADEMIC PROJECTS

**Capsico Health Care Pvt Limited, Full Stack AI/ML Developer**, India                    June 2023 - August 2023
- Extended models using **Python** and **BigQuery,** along with **AI/ML** nodes during runtime, enhancing system performance and reliability

**IIT Kharagpur, MSc Computer Vision Thesis Project : Rhythmic Activity Detection in Kathak Dance's Footwork**   July 2019 - April 2020
- Detected Rhythm of an Indian Dance Form with just audio-less video footage using **image segmentation** done via **Gaussian mixture-models**
- Implemented state-of-the-art instance segmentation models **Mask R-CNN** and **SiamMask** using **Python** and **PyTorch**