

# Dhanush Kumar Antharam

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## Education

University of North Carolina, Charlotte

Master of Science in Computer Engineering

Aug 2023-May 2025

## Experience

### Engineering Intern, King Machine, Charlotte

Jan 2025 – Present

- Developing an automated file management system in Python to optimize memory usage, reducing storage by 1 TB and streamlining workflows.
- Automating notifications to minimize manual effort and integrating Git (bare repository) for seamless version control, enhancing productivity and data management.

### Senior Data Analyst, Juspay Technologies Pvt Ltd, Bangalore, India

Jan 2022 - June 2023

- Developed an automated real-time data analysis system using R, BigQuery (GCP), and Clickhouse, reducing analysis time by 98% (from 3 hours to 3 minutes), while providing customized alerts and reports via Slack and email.
- Designed and implemented ETL pipelines for daily updates to Google BigQuery and built a Golang-based server to automate R and Python processes, containerized with Docker and deployed via Jenkins, GCP, and AWS ECR, optimizing the infrastructure and reducing costs by 80%.

### Machine Learning Engineer, Misplaced Minds, Hyderabad, India

Jul 2021-Dec 2021

- Developed a Business Genie model using Computer Vision and Deep Learning to monitor real-time employee and customer movements, identify store hotspots, and perform re-identification, boosting operational efficiency by 50% through automated, real-time insights that reduced the need for manual monitoring.
- Deployed the application on AWS Lambda for efficient, scalable real-time data processing and updates.

### AI & ML Intern, People Tech Group Inc, Hyderabad, India

May 2021 – Jul 2021

- Developed an algorithm for parsing resumes, which significantly improved data extraction accuracy and efficiency.
- Conducted data analysis to enhance the resume parsing process, leading to a more streamlined and effective candidate selection workflow.

## Technical Skills

- **Programming:** R, Python, Golang, Object-Oriented Programming, JavaScript, HTML/CSS.
- **Databases:** PostgreSQL, BigQuery, Azure DB, Clickhouse, Windows, Linux.
- **Tools & Platforms:** Docker, Jenkins, RStudio, Jupyter Notebook, Visual Studio Code, Git, Bitbucket.
- **Other Skills:** REST API development, containerization, CI/CD, Power BI, Tableau.

**Core Competencies:** Data Structures and Algorithms, Data Analysis, Machine Learning (scikit-learn etc), Deep Learning (PyTorch, Tensorflow), Web Scraping (Selenium), SQL, Containerization (Docker), CI/CD Pipelines (Jenkins), Agile methodologies.

## Projects

### Multi-Processor Cache Coherence Simulation

- Developed a cache coherence protocol for a 4-processor system with 64KB L1 caches and shared memory, implementing both snooping and directory-based schemes with 1-cycle latency.
- Designed and optimized a Bus Arbiter for precise MemBus control, improving system performance and communication.

### Commissioning Management Web App – Full Stack Project

- Leading the development of a web app for the Facilities and Management Department at UNCC to streamline external-to-in-house commissioning processes.
- Built the app using R Shiny (frontend), deployed on shinyapps.io, integrating MongoDB for data management and incorporating a questionnaire feature. Utilized HTML, CSS, and JavaScript for enhanced interactivity.

### Estimating Vehicle Speed on Roadways Using RNNs and Transformers: A Video-based Approach

- Developed a real-time vehicle speed estimation system using RNNs, LSTMs, GRUs, and Transformers, achieving 94.25% accuracy (VS13) and 90% with Transformers.
- Designed a scalable, non-intrusive traffic monitoring system leveraging video surveillance, reducing RMSE to 3.96 (VS13) for precise speed estimation.

**Paper Publication:** "Abnormal Activity Detection using Deep Learning", published in the Springer Nature LNNS series and presented at the 5<sup>th</sup> International Conference, World S4 2021.

**Link to Publication:** [https://link.springer.com/chapter/10.1007/978-981-16-6309-3\\_63](https://link.springer.com/chapter/10.1007/978-981-16-6309-3_63)

## Achievements

- Achieved certification in Data Science with a specialization in AI & ML from Innomatics Research Labs.
- Participated in ISTE-National Level Codeathon 2020, Organized by CISCO Networking Academy.
- Participated in Smart India Hackathon-2020 (college level) at MGIT.