JAYASURIYA NANDHAGOPAL

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SUMMARY

Mechanical and Industrial engineer with 4 years of technical experience in new product development and machine learing with master's degree in industrial engineering and experience in developing deep learning models and ETL pipelines.

EDUCATION

Toronto Metropolitan University | Master's in Industrial Engineering   **January 2024**

Anna University, Chennai, India | Bachelor's in Mechanical Engineering   **March 2020**

TECHNICAL EXPERTISE

SolidWorks | AutoCAD | Autodesk Fusion 360 | Ansys| Python | Arduino | SQL | Deep learning

SOFT SKILLS

Project Development | Leadership | Task Prioritization| Stake holder engagement | Time management | Collaboration

PROJECTS DEVELOPED

1. **Anti fall self-balancing walker for patients with down's syndrome**
2. **Cloud Based Smart Dual Fuel Switching**
   - short-term renewable energy generation and energy demand AI models funded by Canadian Government part of sustainability initiative
3. **Generative tutoring server**
   - Developed Text to Speech and Speech to Servers for Tutoring application
4. **Design and Fabrication of Customizable CNC Machine Tool Holder with Through Coolant Facility**
   - Developed for Marvel Machining Systems 4 axis CNC machines
5. **Manufactured a Tool Vending Machine**
   - Developed for Marvel Machining Systems inventory department funded by industry
6. **Digitization of Swing Check Valve**
   - Developed for Schlumberger for predictive maintenance of valves in petroleum pipelines using IoT and AI.

EXPERIENCE

MLEngineer   April 24- Present

Optima Communications, Toronto

- Develop Speech-To-Text transcription model and large-scale deployment to transcribe 100 customer service representatives
- Classify the transcriptions as good, bad, poor call quality based on security breach criterion increasing call adherence by 10%

MLOps Engineer   Jan 24 - Feb 24

Queen Elizabeth Tutoring, Mississauga

- Planned and integrated Google Text-to-Speech AI with ChatGPT to enhance tutoring application functionality.
- Terraform and Ansible infrastructure automation for Python web application infrastructure using GCS, GKE, Cloud SQL, and Load Balancers.

Code Repo*: Text to speech application architecture*

Graduate Research Assistant   Nov 22- Sep 23

Toronto Metropolitan University

- Vertex AI - Custom Deep learning model development and maintain data processing, AI model registries and deploy container to GKE using Vertex AI pipelines.
- Developed python data ingestion containers and schedule with Google composer.
- Worked with Google Dataproc to perform EDA using Pyspark cluster.
- Developed Terraform and Ansible scripts to reduce the development cost of the application by 18.3%.
- Trained renewable energy prediction model with 90% accuracy using an LSTM architecture

Code Repo: *Renewable energy prediction data pipelines and infrastructure*

Data Engineer   Sep 20 - Aug 22

Accenture Solutions, Bengaluru, India

- Built complex Power BI dashboards, reports integrating SharePoint Online, SQL Server, SAP 700, Salesforce, Azure Data Lake.
- Skilled in publishing and managing Power BI reports and dashboards, including sharing insights, configuring refreshes, implementing Row-Level Security, and optimizing for mobile access.
- Developed ETL workflows using Power Query, ADF and data bricks for big data.
- Exposure on data warehousing in Snowflakes and BigQuery.
- Developed advanced analytics Python scripts for data manipulation, optimizing big data transformations.
- Optimized DAX measures, SQL queries and implemented Direct Query improving report performance by 40%.

Manufacturing Engineer   Nov 2019-Sep 2020

Marvel Machining Systems, Coimbatore, India

- Hands on experience in 5 axis and 3 axis CNC machines and involved in design and manufacturing projects like CNC through coolant enabling holders and tool vending machine.
- Improved the deep drilling capacity by 71% by utilizing through coolant enabling holders in 8 vertical machining centers
- Part of team to implement lean methodology and carried out 5s implementation, value stream mapping and also created kanban card system for fixtures dies and raw materials. Created a systematic storage of tools by tool vending machine which improved the total productivity by 4%.
- Collaborated with Tool room team and developed poka yoke techniques for fixtures and jigs used for mass production.

CERTIFICATIONS AND CONFERENCES

- Microsoft Azure Fundamentals (AZ-900)
- Microsoft Azure Data Fundamentals (DP-900)
- Ripples Blockchain Conference 2023 Toronto

CONFERENCES AND PUBLICATIONS

- **Appraisal of Mechanical and Tribological Properties on PA6-TiO2 Composites through Fused Deposition Modelling**
- **Modeling and Analysis of Helical and Wave Spring Behavior for Automobile Suspension**