Tharun Nagaveera Marthandan

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Education

- **University of Ottawa** — Ottawa, ON
  Master of Engineering - Computer Engineering; — *Sep 2022 - May 2024*
  Courses: *Software Project Management, Data Science Applications, Cloud Infrastructure and Technologies, Integrated DBMS*
- **Government College of Technology** — Coimbatore, India
  Bachelor of Engineering - Electronics and Communications Engineering; GPA: 8.69 — *Aug 2017 - Apr 2021*
  Courses: *Object Oriented Programming, Data Structures and Algorithms, Big Data Science, Computer Networks, Computer Architecture*

Skills Summary

- **Languages**: Scala, Python, Java, SQL, Bash, Functional and OOP paradigm, HTML, CSS
- **Frameworks**: Django, Apache Spark, Elasticsearch, Docker, Apache Superset, FastAPI, Play Framework, React, Git
- **Cloud**: AWS, MinIO
- **Python**: Data Science, Data Visualization, Machine Learning, GUI, Web-scraping, IoT and Robotics
- **Platforms**: Kali Linux, Ubuntu, Raspbian, ROS

Experience

- **Claritrics India Private Limited**
  Junior Research Engineer Trainee (Intern, Full Time) — *Jun 2021 - Jul 2022*
  - **Data virtualization**:
    - Developed data virtualization tool with MinIO and relational database as the data lake
    - Established data processing pipeline with Apache Spark with a series of steps by extracting and cleaning text, transforming the data to facilitate querying, and storing in the lake
    - Developed APIs for uploading, searching, sampling, transforming, filtering efficiently by pre-indexing data with Elasticsearch while storing
    - Tested for concurrency with a unit test suite for APIs and invokables and improved the concurrency by 18% by making transformations and storages asynchronous and reducing dependencies
    - Created a dashboard with Apache Superset to provide a summary with 5 independent filters over the files' medical facility and speciality, client, file types, content, size and date
  - **API web services**:
    - Developed and deployed 6 API services for information retrieval, data manipulation, text extraction from RTF, Docx, ODT and PDF and images with Tess4J
    - Data manipulation - cleaning medical data, removing headers and footers, tokenization, document classification
    - Containerized Scala and Python APIs with Docker and performed load testing with Apache JMeter and Kibana
    - Documented API guides, functionalities, use cases and workflow with MkDocs and Sphinx
- **Pianalytix Edutech** — Remote
  Python Developer Intern (Intern) — *Dec 2020 - Jan 2021*
  - **Web and GUI Projects**: Developed proof of concept applications using Django and Tkinter. The projects include - Social media, digital news, student dashboard, Image editor and Payment application. Used MVT architecture and includes authentication and authorization, admin panels, data visualization and deployed in EC2 instances
- **Freelancer** — Remote
  Tutor & Developer
  - **Varsity Tutors**: Tutored international students on computer programming and data structures through varsity tutors
  - **Ebay webscrapping**: Created a web scrapper GUI that scrapes customized eBay orders and spreadsheets them
  - **Invoice Generator**: Created invoice generator GUI with a template that can edit, save and load quotations

Projects

- **Caterpillar Inc's Robotic Competition**: Developed an autonomous navigation algorithm with Computer-Vision to detect image patterns and objects as a guiding source for the robot to score automatically with a hit rate of 92%
- **Learning Management System**: Developed an LMS web application utilizing authorization where staff create questionnaires, grade students and students answer, visualize and compare with past results. It includes a student dashboard where they can use tools and deep-learning services like image-to-text, text-to-speech, integrated dictionary and Wikipedia
- **Automatic Floor Sanitizer Robot**:

  Developed an efficient navigational algorithm that would clean the maximum area with the least distance by tracking the path and using Dijkstra's algorithm to find the next shortest cleaning destination

Honors and Awards

- Second prize in Caterpillar Inc's annual Robotic Competition
- Recognized by my college for automating attendance that reduced around 15 minutes of attendance time
- Best project in our department and Government-funded project - Automatic Floor sanitizer robot
- Third prize in Inter-college project symposium for self-driving car project
- 27 National Rank in Robert Bosch's AI hackathon
- Won 2nd Prize for presenting the topic 'AI in Prosthetics' at Inter-college Symposium
- Coursera Certifications - Database Management, Python, IoT