Yash Girishbhai Amethiya

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Education:

Master of Science in Computer Science (Grades: 9.1) September 2022 – May 2024
***Lakehead University**, Thunder Bay, Ontario, Canada*

Bachelor of Technology, Computer Engineering (Grades: 8.7) July 2018 – May 2022
***Dharmsinh Desai University**, Nadiad, Gujarat, India*

Skills:

- Programming: Scala, C, C++, Python, Langium (DSL)
- Technologies: Artificial Intelligence, Machine Learning, Data Analysis & Visualisation, Deep Learning
- Databases: PostgreSQL, SQL, MySQL, MongoDB, SQLite3
- Familiar: CI/CD, AWS, GCP, OAuth, MEAN, MERN, Next.js
- Tools: Tableau, Power BI, Excel, Powerpoint presentation, Git, Postman, Labelme, Labelimg

Experience:

Software Developer (Skills: Scala, ScalaJS, TypeScript, Langium, Sprotty) August 2024 – Present
***Aurora Constellations**, Thunder Bay, ON*

- Designed and implemented a **Domain-Specific Language** using **Langium** for creating structured **patient medical plans**.
- Developed **dynamic visual diagrams** for patient treatment workflows using **Sprotty**.
- Built a **VS Code extension** to integrate **DSL-based language support**, enabling syntax highlighting, auto-completion, and error checking.
- Integrated a **Patient Tracker** system and backend **server** directly within the **VS Code extension**, improving accessibility for healthcare professionals.
- Worked with **Scala.js** for frontend components and ensured seamless integration with the backend services.

Software Developer (Skills: Scala, ZIO, Tapir, Quill, Docker, PostgreSQL) July 2024 – August 2024
***Aurora Constellations**, Youth Effect Program by **Northwestern Ontario Innovation Centre**, Thunder Bay, ON*

- **Optimized patient data retrieval** by upgrading the **patient tracking system** using **ZIO**, reducing response time by **30%**.
- **Designed and deployed** a scalable **PostgreSQL database schema** in **Docker**, improving data consistency and maintainability.
- **Implemented REST API endpoints** using **Tapir**, enabling seamless communication between the frontend and backend.
- Enhanced code reliability and API stability by writing unit tests and rigorously testing endpoints with Postman, ensuring a bug-free deployment.
- **Collaborated with senior developers** in code reviews, improving code quality and aligning with industry best practices.
- **Successfully completed** the **Youth Effect Program**, contributing to real-world software solutions and expanding technical expertise.

Research Graduate (Skills: Research, Computer Vision, Python, PyTorch) September 2023 – April 2024
***Lakehead University**, Thunder Bay, ON*

- **Published a comprehensive method** utilizing a Region-Based Convolutional Neural Network (RCNN) with VGG19 to achieve a **~93% detection accuracy in PDF pages**, while deploying **smart pre-processing techniques** like Smudging.
- Fine-tuned a split-and-merge technique for table structure recognition, yielding a weighted **average F1 score of 52.3%**, **surpassing SOTA CascadeTabNet's** score of 23.2%, ensuring generalizability across diverse document sets.

Research Intern (Skills: Python, TensorFlow) December 2021 – April 2022
***Institute for Plasma Research**, Gandhinagar, Gujarat, India*

- Led a research team in developing advanced neural network models for image classification and object detection, achieving over 95% accuracy and **contributing to R&D** through the **creation** and processing of a **15,000-image dataset**.
- Engineered a secure, **Django-based** web application **integrating deep learning models**, facilitating real-time object detection and enhancing project deliverables.

Publications:

- Amethiya, Y., & Bajwa, G. (2024). Automatic Table Detection and Tabular Data Extraction from Scanned Documents. Springer-Smart Innovation, Systems and Technologies (SIST). *(Accepted)*
- Amethiya, Y., Pipariya, P., Patel, S., & Shah, M. (2022). Comparative analysis of breast cancer detection using machine learning and biosensors. Intelligent Medicine, 2(2), 69-81. *(Published)*