

# Balaji Leninrajan

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## Technical Skills

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**Languages:** Python, C, C++, C#, Go, Dart, Rust, Assembly, Kotlin, Scala, Java, JavaScript, TypeScript, SQL, Bash  
**Technologies:** Flask, Django, Spring, Node, Angular, React, React Native, Flutter, Android, Firebase, AWS, Linux, Git, RISC-V, MIPS, OpenGL, RaspberryPi, Selenium, Jira, pytest, PyTorch, TensorFlow, Pandas, NumPy, Docker

## Experience

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- ◆ **Shopify** | Software Engineering Intern January 2025 - April 2025
  - Communications platform team
- ◆ **YTY Group** | ERP/Web Development Intern May 2024 - August 2024
  - Fine-tuned a GPT-J model with custom data leveraging **Python** and **Transformers**; deployed the model to a web server using the **Django REST framework**
  - Trained an AI model to predict employee attendance with **Tensorflow**, leveraging **Pandas** to clean up data
  - Built a mobile app in **Flutter** to handle expense claims forms with local storage and persistent login, saving multiple minutes per submission and allowing submissions to be initiated offline
- ◆ **AWS Cloud Club (UW + GTA)** | Technical Lead June 2024 - Present
  - Managing the usage of **EC2**, **SageMaker** and other **AWS services** on WAT.AI projects
  - Headed technical development and hosting of a **ML** workshop with over **100 participants**
  - Bridged communication gaps between AWS, external partners, and club members
- ◆ **Waterloo Aerial Robotics Group** | Project Manager January 2023 - Present
  - Overseeing the development of a **Flutter**-based dashboard to monitor telemetry from **MAVLink**
  - Crafted **CI/CD** pipelines using **pytest** and **Github Actions** and conducted regular **code reviews**
  - Implemented a **shortest path algorithm** to route the drone through waypoints while avoiding obstacles

## Projects

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- ◆ **TapCode** | Flutter
  - Designed a program to translate between speech and morse code using **vibration motors** on mobile phones to encode morse code for accessibility
  - Leveraged **Google Gemini** to shorten and optimise text for encoding
- ◆ **ShowerScribe** | Flask, Python, Bootstrap, SQL, HTML/CSS, RaspberryPi
  - Built a voice-enabled Personal Digital Assistant to record shower thoughts using a **RaspberryPi**
  - Implemented voice transcription by using AssemblyAi with **~89% accuracy**, beating our target of 70%
  - Developed a **Flask** web server for users to view and manage recordings
  - Orchestrated automatic initiation of the recording engine and web server upon system boot using **Bash**
  - Added summarisation of recordings, brainstorming, and syntactic search with Cohere's **LLM services**
- ◆ **Tic-Tac-Toe AI Agent** | C
  - Programmed an **adversarial search** algorithm to play Tic-Tac-Toe in C
  - Doubled the efficiency of the agent by implementing **Alpha-Beta pruning** to increase efficiency
  - Created a simple CLI interface to play against the AI agent

## Education

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**University of Waterloo** **2023 - Present**  
Bachelor of Software Engineering Waterloo, ON, Canada  
**Coursework:** FPGA design, Data Structures, Databases, Compilers, Formal verification, Computer Architecture