

# Luis Antunes

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## Education

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**University of Toronto** – Bachelor of Applied Science in Computer Engineering Graduated June 2025  
Minor in Artificial Intelligence and Engineering Business

## Skills

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**Programming:** Python, C, C++, JavaScript, HTML, CSS, Bash

**Technologies:** Azure, Nginx, React, PyTorch, FastAPI, Kubernetes, Docker Compose, Pandas, Git

**Languages:** English, Portuguese

## Experience

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**Software Engineer Intern**, Compugen Inc. – Toronto, Canada Sept 2023 – Aug 2024

- Built a full-stack distributed AI platform from scratch: **FastAPI** backend, **React** frontend, **Qdrant** vector database, **Redis** for user data, and **OAuth 2.0** authentication, serving 50+ users with sub-30s responses
- Delivered a 90% accurate RAG-based HR query system through **PyTorch** optimizations
- Maintained version control through **Git** and **Azure DevOps**, assisting in collaboration and documentation
- Created comprehensive documentation detailing the system's design choices, implementation details, and operational procedures

**IT Consulting Intern**, Compugen Inc. – Toronto, Canada May 2023 – Aug 2023

- Developed **Python** script for email address reconciliation, reducing mailbox migration time by 75%, saving 120 hours for a 5-consultant team
- Presented C-suite AI strategy, resulting in a 60% consultant efficiency increase and secured a 1-year internship
- Conducted M365 migration risk assessment for a major financial client, developing and implementing mitigation strategies to accelerate the process by 20%

## Projects

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**OpticMap** lcantunes.com/#!/projects/mapping-software

- Achieved a 4x increase in rendering speed (from 15 FPS to 60 FPS) for dense maps through Level of Detail (LOD) optimization using the GTK library
- Reduced route calculation time by 50% through the implementation of **A\* pathfinding**
- Enabled accurate location discovery even with spelling errors using **BK-Tree autocomplete**

**HomeLab** lcantunes.com/#!/projects/home-lab

- Designed and implemented a multi-purpose home server leveraging **Unraid** and **Docker** containers, providing VPN (**WireGuard**), media streaming (**Jellyfin**), and photo storage (**Immich**)
- Configured DNS resolver to block trackers, enhancing privacy and blocking 99% of malicious queries

**AccenTalk** lcantunes.com/#!/projects/accen-talk

- Developed an **RNN-based deep learning model** for improved accent recognition, using **PyTorch** and bi-directional **LSTMs** on a diverse dataset of 1800+ spoken English samples
- Enhanced speech recognition accuracy for non-native accents by refining the model with techniques like CTC loss and regularization

**GroceryFlow** lcantunes.com/#!/projects/grocery-flow

- Developed grocery shopping automation using **Python**, saving users an average of 4 hours per month
- Implemented a GUI using **PySimpleGui**, enabling efficient product search, filtering, and streamlined checkout
- Automated discount detection during checkout using web scraping and **Stripe's REST API**