

# VEDANT VYAS

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## EDUCATION

### University of Alberta

*B.Sc Honors in Computer Science*

Coursework: Hons Linear Algebra, Computer arch, Probability, Algorithms,  
Advanced Hons Calculus 1 & 2, SQL, C, Intro Machine Learning, Abstract Algebra, Real Analysis  
Major GPA: **3.97/4.00**; Overall GPA: **3.9/4.00**

Edmonton, AB

Sep 2020 - Dec 2024

## EXPERIENCE

### Research Assistant, NLP Group

*Alberta Machine Intelligence Institute*

Edmonton, AB

May 2023 – Present

- As part of the NLP group at U of A, I am a member of various reading groups (Meta learning, Neural Net optimization etc.,)
- I am currently exploring some new novel ways to improve knowledge distillation between neural nets.

### Machine Learning Engineer

*NRC CAN & CCG, UAlberta*

Edmonton, AB

May 2023 – Present

- Working on a joint project with [NRCCAN](#) & [CCG](#) to train a Vision model to identify tree species using lidar data.
- Project's goal is to identify susceptibility for various trees in impacted regions to burn during wildfire, which can assist firefighters.

### Research Assistant, High Performance Computing group

*University Of Alberta*

Edmonton, AB

May 2022 – Aug 2022

- I worked on a unified MLIR dialect in collaboration with **IBM** that will allow the use of IBM MMA operations in **MLIR** to boost matrix multiplication operations which aim at improving the speed of compilation.
- My development work with IBM was done in **C++** and **tablegen**, where I wrote a new [MMA dialect](#) in C++.
- Worked on the creation of **assembly (Risc-V)** coursework over the summer, that included writing grading scripts using multithreading and shell, using **python** to create animations, and lastly writing a solution in RISC-V machine instructions.
- **Academic Advisor**: Dr José Nelson Amaral

## RELEVANT PROJECT EXPERIENCE

### [Meal Planner App](#)

- This is a **meal planner app**, which lets users organize the ingredients at home, add recipes, plan meals and has an automated shopping list, which is created based on the meal plan for the week.
- We used **google firebase** to store the user data (which is linked with their login credentials). App was primarily written in Java using the **Android Studio framework**. To understand the functioning of the app better, read [this](#).

### [Math TTS: Latex to Speech](#)

- This project uses React for the frontend, and Flask for the backend. We use OCR tools for LaTeX image processing, and Google Cloud Platform for deployment and hosting. We use ANTLR4 to build our own lexer and parser to convert latex to english and then we use google's cloud API to convert that to speech, and then it is processed and displayed on the web.

## HONORS & AWARDS

[4th rank among 25 teams in CCPC\(Calgary Collegiate Programming Contest\) 2021](#) that got me a cash reward

Undergraduate Student Scholarship Awardee

[Adas Team Academic Excellence Scholarship](#) in Computing Science

## CAMPUS & COMMUNITY INVOLVEMENT

**Problem Solving Club**, *Member*

Aug 2020 – Present

[U Of A Student Union](#), *Science Councillor*

May 2022 – Present

**Mathematical Sciences Society**, *Member*

Sep 2021 - Present

## SKILLS

**Programming**: C++, Python, Risc-V, C, Julia, Regex

**DeepLearning**: Pytorch, Tensorflow, Pandas, Numpy, hugging face

**Query**: MySQL, Sqlite3, MongoDB

**Algorithms**: sub 1500 rank at [Kattis](#)