

Victor Gao

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Education

University of Waterloo | Statistics Major | 2021 - Present | 3.9/4.0 GPA

Courses: Algorithm Design, Linear Algebra, Multivariable Calculus, Probability, Statistics, Combinatorics, Graph Theory, Optimization, Stochastic Processes

Awards

- **Codeforces** (Popular programming website) | **International Master** (top 0.3%)
- **ICPC ECNA Regionals 2023** | **Top 10** of 150 teams
- **Facebook Hacker Cup Round 3 2023** (International coding contest) | **Top 200** of 20000
- **USA Computing Olympiad Platinum Division 2023** (National contest for USA) | **1st place**
- **Google Kickstart Round H 2021** (International coding contest) | **Top 50** of 6000
- **Canadian Computing Olympiad 2020** (Invitational contest for top Canadians) | **Silver medal**

Skills

Languages: C++, C, C#, Java, Rust, Python, Ruby, JavaScript, Typescript, PHP, HTML, CSS, SQL, R

Frameworks and tools: Matplotlib, Pandas, Numpy, Tensorflow, PyTorch, Flask, Node, jQuery, Vue, Angular, React, Svelte, Tailwind, Jekyll, MySQL, SQLAlchemy, MongoDB, Git, Linux, Docker, Nginx

Portfolio (See [website](#) for additional projects)

Herriot ([Demo](#), [Code](#)) | A organiser/checklist for programming problems

- Allows users and/or administrators to create, edit, vote, and comment on problems
- Allows creation and sharing of custom problem lists
- Supports filtering/sorting problems by difficulty and tags

Skills used: Typescript, Vue, Nuxt, Tailwind CSS, Node, Express, MongoDB, Git

Tle ([Code](#)) | Discord Bot for Competitive Programming

- Uses data from Codeforces API to graph user statistics, suggest practice problems, and predict rating changes and problem difficulties
- Authenticates and links Discord users to their Codeforces account

Skills used: Python (SQLite, Numpy, Pandas, Matplotlib), Git

Music Classifier ([Blog](#), [Code](#)) | Music Classification using Machine Learning/AI

- Collects and processes songs from the internet and prepares the training data using Fourier analysis
- Trains a convolutional neural network (CNN) to classify music by genre with 99% accuracy
- Prevents overfitting using dropout and data augmentation

Skills used: PyTorch, Numpy, Pandas, Matplotlib

Experience (See [website](#) for additional experience)

Redlib | Software Developer, System Administrator

- Implemented a configuration option for subreddit filtering
- Hosted a webserver on a local Linux system using Docker and Nginx
- Exposed the server to allow access over the internet

Skills used: Rust (Hyper, Askama, Rustls), Docker, Nginx, Linux (Bash)

Codeforces LATOKEN Round 1 | Contest Organiser, Problem Author

- Created a programming competition with 21,000+ participants sponsored by LATOKEN
- Devised and prepared original algorithmic problems
- Ensured accurate judging verdicts and a balanced difficulty distribution

Skills used: C++