# Noah Kay

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## EDUCATION

**New Westminster Secondary School**                                                   New Westminster, BC
*Honours Student — Double Dogwood*                                                      *Sep 2021 – Jun 2025*

## PROFESSIONAL EXPERIENCE

**Superwhisper**                                                                         Remote - Austin, TX
*Software Engineer Intern*                                                               *Jan 2024 - Ongoing*
- Wrote State-Of-The-Art (SOTA) AI solutions in Python, C++, and Swift
- Significantly optimized a speaker diarization pipeline, reducing processing time from 37 seconds to 3 seconds for a 7-minute audio file, greatly surpassing the performance of leading open-source alternatives.
- Designed and implemented a proprietary clustering algorithm for speaker embeddings, employing agglomerative clustering techniques. This innovation prioritized speed, robustness, and scalability, delivering consistent accuracy without the need to predetermine the number of speakers involved, unlike most open source solutions.

**Pacbrake**                                                                             Surrey, BC
*Contracted Software Engineer*                                                           *Feb 2022 - Feb 2022*
- Developed an advanced web scraping tool using Selenium to automatically gather and analyze competitor pricing data for all parts carried by Pakbrake. This provided crucial insights for competitive pricing adjustments.

**Freelance**                                                                            Remote
*Contracted Software Engineer on Fiverr*                                                 *Sep 2021 - Jun 2022*
- Provided custom software solutions on Fiverr, developing small-scale programs tailored to customer specifications. Additionally, contributed to the development of various Roblox games.

## PROJECTS

**STAR** | *Research, AudioAI*                                                           Sep 27 2023 - Ongoing

STAR is an ongoing research project aiming to advance the current knowledge on bandwidth extension, creating information where there once wasnt, transforming low fidelity audio to high. STAR is being trained using millions of examples with Pytorch and custom learning objectives.

**MISST** | *Python, Pytorch, Numpy, Tkinter, GUI, AudioAI*                             Aug 7 2022 - Aug 23 2023

MISST uses state-of-the-art demucs source separation models to extract the 4 core stems from audio files (Bass, Drums, Other Instrumentals and Vocals). But it is not limited to this. MISST acts as a developped music player aswell, fit to enjoy and medal with your audio files as you see fit. MISST even comes prepared to import songs and playlists directly from your music library.

**SPOT** | *Python, FastAI, Heroku, ImageAI*                                            Oct 15 2021 - Nov 8 2021

SPOT is a web application designed to analyze skin lesion images and assess their potential malignancy. Utilizing deep learning models trained with FastAI and hosted on Heroku, SPOT aids in early detection and awareness of skin cancers, making critical health information more accessible.

**Autotweets** | *Python, LLM Finetuning*                                               Jul 26 2022 - Jul 30 2022

Finetune any text generation model on huggingface on a specified user(s) tweets to immitate their personality, manurisms, and create an amalgamation of different polarizing figures.

**YAKBot** | *Python, Automated Agent, Multimodel AI*                                   Dec 24 2021 - Apr 20 2022

YAKbot is a collection of AI models based on image generation, analysis, and processing; all wrapped into one Discord Bot. YAKbot's out-of-the-box commands range from image generation with VQGAN+CLIP or guided diffusion to image analysis and captioning with personality.

## TECHNICAL SKILLS

**Proficient in**: Python, C++, C, Swift, ML, Data Science, Pytorch, Numpy, Einops, Pandas, Matplotlib, Git
**Knowledgeable in**: Java, Go, Pascal, Linux, Bash, HTML, CSS, Networking, OSINT, Javascript, Next.js, Three.js