

# Ali Rafiei

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## SKILLS

**Languages:** Python (7 yrs), C/C++ (3 yrs), JavaScript (2 yrs), HTML+CSS (2 yrs), SQL (1 yr), Assembly (1 yr)

**Libraries:** Hugging Face, TensorFlow, OpenCV, Pandas, Scikit-learn, NumPy, Matplotlib, MongoDB, SQL

**Frameworks:** Flask, Express, Node.js, React, Angular, Django, Bash, OpenAI Gym

**Tools & Technologies:** Git, MATLAB, VS Code, IntelliJ IDEA, REST APIs, Photoshop

## EXPERIENCE

### Vipo.ai

Remote

*AI/Software Engineer Intern*

*May 2023 - Aug 2023*

- Built a real-time speech-to-text app using GPT and Deepgram to transcribe and separate voices in parent-child conversations, supporting therapists with accurate dialogue analysis
- Integrated ElevenLabs into a web platform to deliver personalized reading lessons with AI voices that sound like the child, helping children with autism engage with text more comfortably
- Improved API speed and reliability by adding parallel processing and fixing race conditions, cutting multi-call delays down to seconds

### University of Alberta - Community-Service Learning

Edmonton, AB

*Full Stack Developer Intern*

*Sep 2022 - Dec 2022*

- Engineered a robust survey submission platform, successfully scaling it to support thousands of users while maintaining high performance and reliability
- Spearheaded 80% of the project development as Scrum Master and Product Owner, effectively guiding the team through Agile Scrum processes to meet project milestones
- Collaborated in a dynamic, team-oriented environment, managing hundreds of distributed tasks to ensure the timely and successful delivery of the project

## PROJECTS & RESEARCH

### AI in Healthcare - Diabetic Retinopathy | Thesis Research

*June, 2024 - Ongoing*

- Enhancing low-quality fundus images and improving diabetic retinopathy severity grading for early diagnosis
- Working on AI explainability to help ophthalmologists interpret model predictions to build trust in automated tools
- Paper accepted at MEDINFO 2025: "Sharper Detection: Enhanced Techniques for Diabetic Retinopathy Grading"

### LLMs and Annotation | NLP Research

*Jan, 2024 - Apr, 2024*

- Co-authored two peer-reviewed papers accepted at SemEval-2024 and COLING 2025
- Collaborated with colleagues to classify semantic textual similarity and relatedness across multiple languages
- Achieved first place in the most competitive section of SemEval-2024, Track A (supervised methods) for English

### Hackathon Projects

*2022 - 2024*

- 2024 HackED: Developed a web application using GPT and Angular to moderate offensive content on 4chan
- 2023 HackED: Created a popular Pokémon calculator website and mobile app for indexed type comparisons
- 2022 HackED: Developed a tool to analyze lecture videos and generate timestamps based on slide transitions

## EDUCATION

### University of Alberta

Edmonton, AB

*Master of Science (Thesis) in Computing Science; GPA 3.6/4.0*

*Sep 2023 - Current*

*Bachelor of Science in Computing Science*

*Sep 2019 - Apr 2023*

*Classes Taken: Data Mining, Databases and Data Structures, Machine Learning, Web Services, Operating Systems*

## VOLUNTEERING & AWARDS

**Turing Society x CSGSA** | Council Member - CS department EDI, social events, and programs

*2024 - Current*

**Graduate Student Teaching Award** | Recipient - Recognized for inspiring students and excellent teaching

*2024*

**VLDB Conference** | Support Volunteer - Managed panel sessions and event recordings

*2023*