

# Remington Rohel

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## Summary of Skills

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### Technical

- Programming experience in Python, Rust, C/C++, Java, CUDA, Bash, and MATLAB.
- Version control with Git with GitHub/GitLab, and SVN.
- Configuration and installation of openSUSE Leap 15.3+ operating system.
- Proficient in Microsoft Office Word, Excel, and PowerPoint.
- Testing, debugging, and fixing RF circuits with VNA, oscilloscope, and multimeters.

### Soft Skills

- Reporting on radar downtimes, software improvements, and other updates on improving workflows.
- Collaborating with scientists on improving radar performance, translating scientific goals into engineering tasks and modelling results.
- Published scientific paper on my work improving SuperDARN radar operations.
- Presented two 20-minute talks on my master's research at annual SuperDARN workshop in 2023 and a poster at the CEDAR conference in 2023.
- Met deadlines and worked with peers to finish tasks in a timely and efficient manner in group design projects and various lab courses.

## Relevant Experience

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**Radar Computer Engineer-in-Training** – SuperDARN Canada May 2021 – Present

### Responsibilities

- Primary developer of HF radar operating software written in Python, C++, and CUDA, with emphasis on implementing new operating capabilities, code readability, testing, and user customization.
- Setting up new computers, including assembling hardware, installation of OS, configuring drives and network settings, installing system libraries, and installing radar software and dependencies.
- Handling radar program requests by scientists, including creation, scheduling, postprocessing, and data transfer.

### Accomplishments

- Development of new capabilities for radars. Researched and designed new transmission pattern which improved sampling rate 16-fold and demonstrated bistatic capabilities which improved spatial coverage by a factor of 2.

- Identified digital filtering as a performance bottleneck and developed new digital filtering scheme that improved filtering speed by a factor of 3.
- Instigated development of Rust software package for replacement of minimally maintained C software used by global SuperDARN community.
- Revamped Python package for postprocessing of radar files with emphasis on usability, extensibility, and speed.

**Software Team Lead, RADSAT-SK CubeSat Project** January 2020 – August 2020

- Coordinated tasks and managed deadlines for team members.
- Developed test plans, design documents, and software architecture.
- Presented key design decisions at our Internal Design Review in August 2020.

**Summer Research Assistant, USASK Physics Department** May 2020 – August 2020

- Implemented a tomographic retrieval algorithm for atmospheric measurements in Python.
- Conducted research into atmospheric physics and measurement methods.

**Education** University of Saskatchewan

**Master of Science in Physics** Expected completion in January 2024

**Bachelor of Science in Engineering Physics** 2021

**Bachelor of Science (3 year) in Computer Science** 2021

Notable classes: Satellite Mission Analysis and Design, Digital Signal Processing, Computational Physics, Electromagnetism, Analog and Digital Electronics, Aeronomy, Ethics, Economics

**Awards**

**NSERC-CGSM Master's Scholarship** 2023

- Prestigious award for high calibre master's students across Canada.

**Governor General's Silver Medal** 2021

- Given to student with highest academic average across all undergraduate programs.

**College of Engineering Dean's Honour Roll** 2017-21

**References**

Available upon request.