

# Falah Sheikh

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## EDUCATION

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### University of Calgary

Bachelor of Science in Computer Science

Calgary, AB, Canada

Aug. 2022 – Sept. 2026

**Relevant Coursework:** *Data Structures & Algorithms, Computer Architecture, Operating Systems*

## SKILLS

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**Languages:** Java, Python, C, C++, JavaScript, HTML/CSS, ARM Assembly

**Developer Tools:** Linux, Git, GitHub, IntelliJ IDEA, VS Code, PyCharm, Eclipse

## EXPERIENCE

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### Machine Learning Developer/Researcher

University of Calgary

Calgary, AB, Canada

May 2024 – Present

- Developed a pioneering CNN model **achieving 82.74% accuracy** in lunar phase classification, processing 20,000+ astronomical images and **achieving 98% prediction accuracy**
- Engineered end-to-end data pipeline using Python, Selenium, and NASA's API to create first-of-its-kind labeled dataset spanning 13 years of lunar imagery, enabling novel research in automated lunar phase detection
- Optimized model architecture through transfer learning with ResNet18 and strategic data augmentation, **improving accuracy from 78% to 82%** while reducing false positives

### Software Engineer

Engenuics Technologies Inc

Calgary, AB, Canada

Sept. 2023 – Mar. 2024

- Developed custom firmware applications using APIs for LED, button, and buzzer modules in IAR and Visual Studio Code
- Worked with ANT protocol for wireless communication in embedded systems

### Software Engineer

TechStart UCalgary

Calgary, AB, Canada

Oct. 2022 – Apr. 2023

- Collaborated with a team of six to deliver a project within a set timeline and scope
- Developed object recognition and distance estimation using Python and OpenCV for a robotic arm
- Created a custom OpenAI Gym environment for the Kinova Gen 3 robotic arm to enable simulated training and testing
- Transferred the learned policy to the physical robot in **2.5 days**, achieving successful pick-and-place operations with computer vision
- [Video Demonstration](#) | [GitHub Repository](#)

## PROJECTS

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[redis\\_py](#) | *Python, asyncio, socket*

- Built a Redis-like server with key-value storage, transactions, replication, and stream support
- Implemented concurrency and RDB parsing using Python's async capabilities

[synodic](#) | *JavaScript, Flask, FastAI, ResNet18*

- Developed a Flask web app to predict the lunar day from moon images using a pre-trained ResNet18 CNN model
- Implemented image upload functionality with real-time predictions and probability displays

[sumo\\_bot](#) | *C++*

- Developed motor control program for SumoBot using C++ and Arduino, enabling speed and direction control via PWM
- Configured motor drivers and sensors, optimizing motor performance for SumoBot applications

[AMSystem](#) | *Python, MySQL, tkinter*

- A GUI-based database management system with input validation, data storage, and CRUD functionality in MySQL