Isaac von Riedemann

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OBJECTIVE

I enjoy using Machine Learning and Computer Vision to answer new and exciting questions. I'm interested in exploring various modalities of images in a fast-paced and pragmatic environment

SUMMARY OF SKILLS

- Strong problem solving skills and experience independently performing research and developing novel methods
- Can communicate efficiently and effectively complex and nuanced ideas
- Experienced in developing: C/C++, Python, Matlab, R programs for multiple platforms such as Windows, Linux, Mac and microcontrollers
- Experienced with developer tools like Git/Github, Jira Docker and SSH
- Experienced in HPC using tools like SLURM, Spark, Airflow and writing mutli-threaded code
- Strong knowledge of network concepts such as TCP/UDP, IP, ports and subnetting, HTTP and API design
- Experienced with machine vision tasks like blob detection, focus and corner detection
- Strong working knowledge of machine learning and deep learning
- Analysed large datasets and answered questions across hundreds of gigabytes of data

Education and Achievements

Paper published in IEEE/ACM IWQOS 2024
SFU Undergraduate Computer Science student | 2020-Current
BC Achievement Scholarship | 2020
High school diploma from Saint Thomas Moore with honours | 2020

Relevant Experiences

- Wrote inference endpoints for finetuned tumour segmentation model using Docker| SFU
- Discovered novel method for lowering LLM costs using RAG and Semantic Caching| SFU
- Implemented Tensor Voting for noise-robust surface extraction from 3D point cloud data | SFU
- Used TF-IDF to explore the semantic link between bean reviews and coffee roast level| SFU
- Using hidden Markov models to find anomalies in electricity usage|SFU
- Used Blob detection to locate regions of damaged DNA in large image dataset(1000+ Images)| BC Cancer

Previous Work and Volunteer Experience

- SFU Medical Image Analysis Lab | Self-Directed Research July-2025-present
- B.C Cancer Research | Part Time July 2024-present
    - Segmented ~50 000 cell images for training a classifier
    - Wrote multi-threaded blob detection method and counted blobs across thousands of images (300+GB)
- Volunteer for SFU Network Lab | Oct. 2023-July 2024
    - Semantic cache for ChatGPT
    - Improving upon existing caching methods and projects
- B.C. Cancer Research| Co-op May-Dec 2022, Part-time Jan-April 2023
    - Developed novel gene imaging technique using microcontrollers
    - Maintained and developed a ($200 000+) microscopy system
- Cellula Robotics | Co-op Summer 2021
    - Helping to build and troubleshoot new company autonomous underwater robot
- STMC Cansat
    - Worked on Electrical; soldering and testing
    - Made it though design phase and were in fundraising when Covid happened