Jakob Koblinsky

Education

University of Waterloo

- Sept 2020 – Apr 2025
- BASc Computer Engineering
- (3.4/4.0 CGPA, 3.8/4.0 Term GPA)
- *Notable Courses*: Compilers, Computer Networks, Reinforcement Learning, Distributed Systems, Data Structures and Algorithms, etc

Experience

Randox

- **Date**: Jan 2024 – Apr 2024
- **Title**: Embedded Software Intern
- **Location**: Antrim, County Antrim, Northern Ireland
- Helped make the Evidence Evolution reliable—very old, Linux, C++, parallel scheduling, clinical analysis robot
- Gained a deep understanding of the 500K+ lines-of-code machine software in the absence of senior developers
- Quickly linked chemical analysis to C++ code to explain results for chemists and biomedical engineers
- Repurposed sensors and augmented task scheduling code to gracefully handle an irregular hardware fault
- Uncovered and patched a fatal bug in a Linux cron job that nobody found for years; increased uptime by 10%
- Collaborated with operators to remove pain points in Qt GUI; modified data categorization; improved user efficiency
- Streamlined release management by integrating and educating on git-flow procedure best practices
- Transferred my key findings about fixing legacy software to the developers of an up-coming product line

ARUP

- **Date**: Jan 2023 – Apr 2023
- **Title**: Software Intern
- **Location**: Toronto, Ontario, Canada
- Developed new features for MassMotion—C++, desktop application for 3D pedestrian simulation
- Routinely showed alternative ways to write more expressive code with modern C++20 features
- Built an indent reformat feature for the internal Python script editor to reduce code sharing friction for users

- Added live syntax error feedback to the script editor using Tree-sitter to reduce the edit-compile-test loop
- Improved maintainability of the script editor search by isolating and unit testing its main data structure (circular buffer)
- Demonstrated strong communication skills with well-received end-of-term presentation

Evertz

- **Date**: May 2022 – Aug 2022
- **Title**: Embedded Systems Intern
- **Location**: Burlington, Ontario, Canada
- Validated and improved the MIO-BLADE-Z21—Embedded, Linux, C++, Audio/Video Processing Device
- Prototyped library with C++ templating and subject-observer pattern to simplify inter-process callbacks
- Researched and reported on latest IEEE video payload specs; confirmed compliance

Genellipse

- **Date**: Sept 2021 – Dec 2021
- **Title**: Software Intern
- **Location**: Mississauga, Ontario, Canada
- Co-architected a live data dashboard; leveraged Python, and AWS Lambda for cost efficiency; eliminated reporting time
- Integrated GitLab CI/CD pipeline into the dashboard development; allowed consistent error-free deployment

Demand Power

- **Date**: Jan 2021 – Apr 2021
- **Title**: Data Analysis Intern
- **Location**: Toronto, Ontario, Canada
- Implemented genetic algorithm in Python for battery use optimization; provided revenue stream insight
- Analyzed client energy data using Python Pandas and presented findings to COO; revealed carbon reduction potential

Projects

JLox Interpreter

Tree-walk interpreter in Java for the Lox language

LoveBoxLink

Arduino based multiplayer whiteboard with custom message serialization

Engineering Capstone

- Small, Low cost, embedded health device for reminding users to stand
- Designing activity detection algorithm with Python prototype and C implementation

Advent of Code

- Yearly programming competition
- Finished to day 18 of 2022 with Python and C
- Finished all of 2023 with Python
- Finished all of 2024 with Python