Buzz A. Walter

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SUMMARY

Highly capable and motivated Software Engineer with 3+ years of experience in developing, integrating, and validating complex high-reliability software. Proven expertise in applying Agile methodologies, implementing robust CI/CD pipelines, and establishing SDLC best practices, eager to contribute analytical and technical skills to enterprise IT solutions.

EXPERIENCE

ALEPH Jan 1, 2025 – Sep 1, 2025

Laser/Embedded Systems Engineer Fort Collins, CO USA

- Engineered a platform-independent diagnostic system using C++ and a Qt/QML front-end, delivered via Docker to ensure consistency across multiple deployment environments.
- Established comprehensive SDLC best practices, including CI/CD pipeline implementation and standardized Git version control, enhancing team collaboration and code quality assurance.
- Implemented a low-level embedded system by programming an STM32 microcontroller to handle serial communication and drive output logic, directly supporting effective hardware communication.

Revo - Foods Jun 24, 2024 – Sep 24, 2024

Software Engineering Intern Vienna, Austria

- Integrated a customized PyTorch/OpenCV model as a lighter-weight, dockerized production detection model, optimizing a critical process and resulting in an estimated 50% reduction in yield loss.
- Managed the complete backend production pipeline using GCP cloud toolchains, ensuring continuous and reliable deployment of API-driven services to facility hardware.

Ardnt Group (*University of Vienna*) Sep 20, 2023 – May 01, 2024

Graduate Research Assistant Vienna, Austria

- Led the design and construction of experimental setups for laser desorption and ionization utilizing CAD software and iterative testing to refine experimental conditions.
- Designed and developed an end-to-end data processing harness for ToF mass spectrometry data, establishing governance and lineage to significantly enhance error analysis and data quality.

XUV Lasers Feb 06, 2023 – Aug 02, 2023

Research Intern Fort Collins, CO USA

- Developed a MIMO (Multiple Input, Multiple Output) sensor fusion and active control system in MATLAB, incorporating advanced data stream dimensionality reduction for robust diagnostics and stability tracking.
- Developed real-time diagnostic and post-processing scripts in Python and MATLAB to improve data volume and quality.

SLAC National Accelerator Laboratory (*Stanford*) Aug 2, 2022 – Oct 21, 2022

AD Research Intern Menlo Park, CA USA

- Trained predictive neural network (NN) models to accurately map system parameters, demonstrating proficiency in state estimation and prediction techniques for complex physical systems.
- Developed a robust data evaluation pipeline for large-scale datasets, establishing data governance and lineage tracking crucial for auditability and the reproducibility of model and system monitoring results.

EDUCATION

Colorado State University Aug 2018 – Jun 2022

B.S. in Physics (Minor in Machine Learning) Fort Collins, CO

- **Relevant Coursework**: Object Oriented Programming in Java, Introduction to Machine Learning, Machine Learning, Statistical Mechanics, Electronics, Computer Organization & Architecture

Colorado State University Aug 2018 – Jun 2022

B.S. in Mathematics Fort Collins, CO

- **Relevant Coursework**: Numerical Analysis I, Statistical Computing, Mathematical Statistics, Information & Coding Theory, Natural Language Processing

University of Vienna (Partial Completion) Oct 2023 – Aug 2024

M.S. in Physics Vienna, Austria

- **Relevant Coursework**: Experimental Quantum Optics & Quantum Information, Advanced Computational Physics

SKILLS

Languages (Most Experience to Least) : C++, Python, Java, JavaScript, QML, Bash, NoSQL, Latex, MATLAB, R

Tools/Frameworks/Libraries : Linux, CI/CD, Docker, GitHub, Qt, OpenCV, STM, Ethernet/USB, Multi-sensor Integration, Systemd, PyTorch/Tensorflow, FastAPI, React, Asana, Cursor, SciPy Stack