

Nicholas Landry

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Education

MS Computer Science, Colorado School of Mines August 2025 – Present

- **Coursework:** Advanced Algorithms and Data Structures, Advanced Databases, Theory of Computation

BS Computer Science, Colorado School of Mines August 2022 – May 2025

- GPA: 3.73
- **Coursework:** Operating Systems, Algorithms, Programming Languages, Database Management

Experience

Software Engineer Intern, Allegion – Golden, CO August 2025 – Present

- Simulate traffic of thousands of real-time connected devices and measure system performance using Locust (Python) testing to provide metrics on the platform's ability to scale towards growth goals.
- Analyze and validate simulated commissioning of thousands of devices by measuring query performance with PostgreSQL and using REST APIs to mimic real-time device actions, ensuring successful device setup.

Software Systems Engineer Intern, Allegion – Golden, CO May 2025 – Aug 2025

- Mapped subsystem interactions expressed in Microsoft Digital Twin Definition Language (DTDL) and TypeScript, creating a comprehensive reference of platform communication for the System Test team.
- Collaborated with verification engineers to formally capture and ensure validation of system functionality by developing software requirements.
- Extracted key corresponding information between two subsystems by evaluating and cross-referencing Cucumber (Gherkin) tests, ultimately identifying gaps and ensuring consistency between tests.

Undergraduate Scientific Programmer, Payne Institute for Public Policy September 2024 – May 2025

- Developed and implemented machine learning models for classification of global high-temperature sources, including You Only Look Once (YOLO) for image classification and Support Vector Machines (SVM) to improve geospatial analysis accuracy and automation.
- Contributed to a multiyear catalog of oil and gas flare detections by preprocessing hundreds of thousands of satellite images via Google Earth Engine and applying AI predictive models, including the Google Gemini API, for classification.

Projects

Analysis of LLM's Adherence to Secure Software Development Best Practices

- Collaborated with a three-member team of student researchers, analyzing code generated by Large Language Models (LLMs) for adherence to software-security best practices using natural language processing (NLP) and machine-learning techniques on over 90,000 developer-LLM conversations from Hugging Face datasets.
- Applied natural language processing (NLP) and machine-learning (ML) techniques—including Bidirectional Encoder Representations from Transformers (BERT) for text vectorization, autoencoders for dimensionality reduction, and relevance filtering using DeepSeek API and Google Translate—to support code evaluation.

Classifying Global High-Temperature Emission Sources with Computer Vision

- Contributed to a research team classifying global high-temperature emission sources using computer vision, engineering a data pipeline that integrates the Gemini API and local Large Language and Vision Assistant (LLaVA) models for near-real-time classification of satellite-detected hotspots.
- Implemented satellite imagery acquisition and preprocessing by integrating the Google Maps Static API to fetch very high-resolution (VHR) images, addressing challenges such as unbalanced training sets and variations in model performance across regions.

Technologies

Languages: Python, C++, C, Java, SQL, JavaScript, TypeScript, BASH

Technologies: REST APIs, Azure DevOps, PostgreSQL, Pandas, TensorFlow, HuggingFace