# Zach Sahlin

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## RELATED COURSEWORK

- Algorithms & Abstract Data Structures
- Machine Learning & Intelligent Systems
- Data Science Algorithms
- Operating Systems
- Database Management Systems
- Programming Languages & Compilers
- Linux & DevOps

## TECHNICAL SKILLS

- Languages: C++, Java, Python, C, SQL
- Tools: Git, Linux, Docker, Jupyter, GitHub Actions, Postgres, AWS Lambda, AWS S3
- Libraries: TensorFlow, PyTorch, pandas, NumPy, scikit-learn, Matplotlib

## EDUCATION

**Gonzaga University** | Spokane, WA                                August 2019 – May 2023
*BS in Computer Science, Minor in Applied Mathematics*

- Graduated Magna Cum Laude
- President's List: Fall 2019, Spring 2020, Spring 2021
- Dean's List: Fall 2020, Fall 2021, Spring 2022, Spring 2023

## PROJECTS

**Machine Learning for Real Estate** | Python, SQL, PyTorch, JS, Fast API       *Fall 2022 - Spring 2023*

- Senior Design Project
- Collects data on historical rental prices, crime data, and school scores.
- Predicts future rental prices with an LSTM.
- Leverages a REST API to connect the web app to the mySQL database.
- Displays historical prices and predictions as a web app.

**Stock Predictor** ⌘ | Python, TensorFlow, AWS Lambda, AWS EventBridge, selenium       *Spring 2023*

- Collects historical and current data from various sources using APIs and web scraping
- Stores and retrieves data on AWS S3.
- Uses an LSTM to predict weekly percentage increase.
- Displays predictions on a web app.
- Utilizes GitHub Actions for a CI/CD pipeline to test and publish to AWS Lambda.

**Image Resizing CDN** | Python, AWS CloudFront, AWS Lambda, AWS S3, AWS CDK       *Fall 2022*

- Automatically resizes and formats images using AWS Lambda.
- Uses AWS CDK to deploy the stack.

## RESEARCH

**Long Span Truss Analysis and Optimization** | MATLAB       *Spring 2023*

- Worked with Dr. Sara Ganzerli and civil engineering students.
- Developed a script to analyze and optimize a truss to minimize material use within the load constraints.

## WORK EXPERIENCE

**Gonzaga University** | Teaching Assistant       *August 2022 – May 2023*

- Teaching assistant for Operating Systems, Computer Security, and Internet of Things.
- Graded programming and written assignments.

**iD Tech** | Online Private Instructor       *June 2021 – August 2022*

- Tutored in 8 different computer science topics, including C++, Java, and Python.
- Completed over 200 private lessons.
- Formed relationships with long-term clients, and developed further skills in communication and coding.
- Collaborated with other instructors to improve teaching methods.