

Jonathan Stiefel



EDUCATION

B.S. Civil Engineering – Bucknell University

2019 - 2023

SKILLS

- Python (Pandas, NumPy, Matplotlib, Sckikit Learn)
- R
- SQL
- Tableau
- GitHub (version control)
- Excel
- OOP
- Data Cleaning and Preprocessing
- MATLAB
- 1762 Rapid peak rating (Chess.com)

PROJECTS <https://jonathanstiefel.github.io/> ← my portfolio

CONCRETE CURING and the EFFECTS OF VIBRATION

- Conducted in-depth statistical analysis on the effects of shock vibrations on curing concrete using **R Studio**.
- Created data visualizations (scatterplots, Q-Q plots, boxplots) and conducted **residual analysis**.
- Identified a linear relationship between shock vibrations and decreased structural integrity, providing critical insights for civil engineering.
- Developed and validated a **linear regression** model relating peak particle velocity (PPV) to ultrasonic pulse velocity ratio.
- Conducted hypothesis tests and calculated confidence intervals to compare cracked vs. non-cracked concrete.

HOUSING PRICE PREDICTION

- Developed a predictive model to estimate house prices using the Ames Housing dataset, which includes 79 features describing various aspects of residential properties.
- Used **Python, scikit-learn, pandas, matplotlib, seaborn** to perform feature engineering, advanced regression techniques (**random forest, gradient boosting**), model evaluation using **Root-Mean-Squared-Error (RMSE)**.

PLAYER BEHAVIOR and CHEATING DETECTION in CHESS

- Utilize **python** to analyze chess.com games to identify potential cheating by leveraging data analytics and machine learning techniques.
- calculate player performance ratings using both **binary search** and **linear regression** methods
- Utilized **Pandas, Matplotlib**, and Seaborn for data visualization to highlight patterns and anomalies

EXPERIENCE

ROADWAY ENGINEER - Element Engineering Group

Summer 2023 - Present

- Utilize MicroStation (OpenRoads) to prepare roadway plans, typical sections, quantities, TTCP, perform cost analysis and submittals following QC/QA process.
- Reference **FDOT design standards** and Basis of Estimates (BOE) to prepare plans

STRUCTURAL ENGINEER - General Dynamics, Electric Boat

Summer 2022

- Write instructions for the sub-contractors to perform repairs and updates to the U.S. Navy's **nuclear submarines**. Specifically repairs to pressure hull and non-pressure hull structural systems (i.e. torpedo tubes, ballast tanks, etc)

PROJECT ENGINEER - The Whiting-Turner Contracting Co

Summer 2020

- Work with the project team to assist in preparing structural design and drawings for buildings (commercial, institutional, residential) from conceptual and preliminary stages of design through to completion
- Perform field review for projects under construction
- Administered workplace health and safety regulations, rules, and guidelines

FIELD ENGINEER – Geo-Technology Associates

Summer 2021

- Performed proctor tests, concrete breaks, nuclear gage tests with soil and asphalt, and wrote daily field reports (DFRs)
- Traveled to dozens of construction sites around NJ to gain a vast understanding of various geotechnical situations

SOLID MECHANICS II TUTOR/GRADER – Bucknell University

Fall 2021

CERTIFICATIONS

Google Data Analytics Certification *in progress*

Engineer in Training Certification (EIT)

Maintenance of Traffic Certification (MOT)