Jacob Cooper
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Education

Georgia Institute of Technology	**Atlanta, Georgia**
Master of Science in Computer Science	May 2025
Master of Science in Structural Engineering, Mechanics of Materials	May 2022
Bachelor of Civil Engineering	December 2018

Work

M2 Structural – Structural Engineer / Programming Lead   **Atlanta, Ga August 2023**
- Developed, tested, and maintained plug-ins for the Revit modeling software using Python in conjunction with the Revit API
- Created plug-ins that allowed for new user functionality that were integrated into the software, or expanded upon existing functionality, to increase work rate and reduce coordination necessary with other parties
- Allowed for savings on projects by preventing rework, ensuring tighter coordination to prevent in-field construction errors, and by reducing man hours spent during the design, review, and construction phases
- Design and detailing of large-scale apartment complexes in conjunction with third parties

Arco Design Build – Structural Engineer   **Atlanta, Ga May 2022 – August 2023**
- Created a CLI tool using Python and OOP that allows engineers to select and carry out calculations for the design of large-scale warehouse facilities more effieciently
- The CLI tool compiled resources and calculations into a singular module allowing engineers to forgo using multiple spreadsheets and aids, as well as reducing the need to rely on external software licenses
- Design and production of design documents for warehouses and cold storage facilities ranging in budgets of $10,000,000 – 50,000,0000
- Reviewed shop drawings and specifications for quality, level of completeness, and adherence to design documents

Projects

Ravens Progressive Matrix Solver
- Programmed an AI agent using Python in conjunction with OpenCV, Pillow, and NumPy that can solve a human intelligence test based on Raven's Progressive Matrices
- Agent achieved an 80% success rate on answering problems in testing by looking for patterns in pixel ratios between images or by identifying patterns based on shape vertices
- Agent utilized learning by recording cases for problems that it could not solve on its own

Drone Delivery Simulator
- A CLI tool created using Java that simulates the ordering, purchasing, and delivery of groceries using a service app that connects multiple stores and customers
- Utilized encryption to allows users to create credentials and then limit access to certain data based on their privileges
- Archived user data after an allotted period

Job Comparison App
- Android Studio App written in Java allowing the user to compare and contrast various job offers to aid in their selection
- Functioning app with multiple screens allowing for input/editing of job offers, inputting current job, and populating a list of jobs for comparison ranked by a metric calculated in the app
- User data stored using SQL to allow for persistence between uses and shut down

Trivia Practice App
- Created a Python GUI application written using Tkinter utilizing OOP principles to allow users to test and improve their trivia knowledge
- Upon selection of a trivia category, the app will pull questions from the specified category from an online trivia API, and the questions will be displayed for the user as they are answered
- User scores are committed to a SQL database and can be viewed graphically using Matplotlib and the existing information in the database

Skills

Mobile and Web: Android Studio, HTML, CSS, Flask
Data: Python, Java, Tkinter, OpenCV, Pillow
Coursework: Knowledge Based AI, Software Architecture and Design, Software Development Process, Computer Networks, Machine Learning for Trading