Alan Devera

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Education

- **Virginia Polytechnic Institute and State University (Virginia Tech)** Blacksburg, VA
  Bachelor of Science in Computer Science - Data Centric Computing *Expected Grad: May 2023*
  Relevant Coursework: *Data Analytics and Visualization, Information Storage and Retrieval, Computer Systems, Data Structures*

Skills Summary

- **Languages**: Python, C, SQL, Scala, Bash, Java
- **Frameworks**: Flask, scikit-learn, PyTorch, BeautifulSoup, OpenCV
- **Tools**: Docker, GIT, MySQL, VSCode, eclipse
- **Platforms**: Linux, Web, Windows, AWS, GCP

Experience

- **Bluechip Technologies LLC** Remote
  Sofware Developer Intern *May 2021 - Aug 2021, May 2022 - Aug 2022*
  - **Data Retrieval and Storage for Disc Golf Players**:
    - Built a containerized web-scraper and leveraged multi-threaded processes to improve the speed of HTTP request calls by 7 times.
    - Developed and managed a MySQL database hosted on AWS with 230k+ disc golf player records.
  - **BigQuery to Notion Integration for Class Use**:
    - Automated data flow from BigQuery to Notion to enable instructors and students to access relevant real-time data.
  - **Technologies**: Python, BigQuery, AWS, MySQL, BeautifulSoup, Docker
- **Virginia Polytechnic Institute and State University** Blacksburg, VA
  Undergraduate Student Researcher - Digital Library Research Lab *Jan 2022 - May 2022*
  - Improved the identification and extraction of text and figures from Electronic Theses and Dissertations through object detection with a success rate of ∼75% for major categories.
  - Contributed to the publication of a paper titled 'Parsing Electronic Theses and Dissertations Using Object Detection' at the First Workshop on Information Extraction from Scientific Publications (WIESP 2022), organized by the Association for Computational Linguistics (ACL). The paper can be accessed here.
  - **Technologies**: Python, Detectron2, PyTorch, OpenCV, PyMuPDF
- **Virginia Polytechnic Institute and State University** Blacksburg, VA
  Undergraduate Teaching Assistant - Data Analytics and Visualization *Jan 2022 - May 2022*
  - Held weekly office hours and assisted approximately 120 students on concepts, assignments, and projects related to data manipulation, visualization, and retrieval, as well as machine learning.

Projects

- **Information System for ETDs (Machine Learning)**:
  - Worked on a team to design and implement a state-of-the-art information retrieval and analysis system for Electronic Theses & Dissertations (ETDs).
  - Implemented object detection algorithms using Faster R-CNN and YOLOv7, and post-processing rules to save objects in a structured format.
  - Used machine learning and natural language processing techniques to solve complex problems and improve information retrieval and analysis.
  - **Technologies**: Python, PyTorch, Flask, Docker, OpenCV, PyMuPDF
- **Music Genre Classifier (Machine Learning)**:
  - Developed a machine learning model to classify music genres based on song data from Spotify.
  - Trained the model through different machine learning techniques such as decision trees and random forest.
  - **Technologies**: Jupyter Notebook, pandas, Scikit-Learn
- **Spotify Data Visualization (Data Visualization)**:
  - Developed multiple visualizations using Spotify song data to analyze trends in my top tracks and genres throughout the years.
  - **Technologies**: Jupyter Notebook, pandas, matplotlib, seaborn
- **Fork-join Thread Pool (Multi-threaded Programming)**:
  - Developed a thread pool that uses the fork-join and work stealing algorithms to efficiently distribute and compute math operations.
  - **Technologies**: C
- **Personal Server (HTTP, Web-Sockets)**:
  - Developed a file server to serve static image and mp4 files to multiple clients.
  - Implemented user authentication to enable private file access.
  - Enabled connectivity over both IPV4 and IPV6 through the use of web sockets.
  - **Technologies**: C, JSON Web Tokens, Web Sockets