Justin Childress

Data Engineer, Data Scientist, Aerospace Engineer
Knoxville, Tennessee
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Skills

Languages Python (NumPy, Pandas, SciPy, etc.), SQL, MATLAB, LaTeX
Databases SQL Server, TSQL, PostgreSQL, BigQuery, Cloud Storage
Technologies ANSYS Fluent, Pointwise, AutoCAD, 3D CAD modeling programs, SolidWorks, Airflow, DBT, Docker, Git, GCP, AWS, Azure, Terraform, Jira, Confluence, Trello, Regular Expressions (regex), Linux, Tableau, Tableau Prep, Power BI, Google Drive, MS Office
Soft Skills Strong oral and written communication, cross-functional collaboration, initiative-driven, adept at communicating technical concepts

Experience

FreightWaves — *Chattanooga, TN*
Data Engineer — *Mar. 2022 - Present*
- Utilized Airflow to design and deploy automated pipelines for data ingestion and transformation
- Maintained over 110 DAGs in production in addition to legacy pipelines using google cloud functions and SQL stored procedures
- Collaborated with product and data science teams to produce insights into air cargo and logistic datasets
- Played major role in organizing and running team-building events to improve interdisciplinary collaboration

Consulting — *Knoxville, TN*
Data Engineer — *Nov. 2024 - Present*
- Contracted with commercial real estate data company to assist with customer integrations
- Designed and delivered custom python scripts to build spreadsheets from API calls

Mortgage Investors Group — *Knoxville, TN*
Business Analyst — *Apr. 2020 - Mar. 2022*
- Built and optimized operational dashboards in Tableau to monitor key performance metrics
- Automated data pipelines and API integrations using Python, accelerating reporting cycles

FreightWaves — *Chattanooga, TN*
Data Scientist — *Jun. 2019 - Feb. 2020*
- Promoted from intern to full-time data scientist within months due to rapid impact
- Supported a multimillion dollar client engagement

Research

Data Science of Fluid Mechanics Research Project — *University of Tennessee*
Graduate Student — *2023*
- Developed python program to analyze videos of flame fronts
- Extracted data on temperature gradients and determined regions steady state behavior
- Investigated feasibility of fully visual techniques when traditional measurement techniques are impractical
- Applied these techniques to old video from UTK's hybrid rocket thrust stand to compare results to known measurement techniques
- Utilized Fourier Transforms to identify dominant frequencies and combustion characteristics of flow

Rocket Nozzle Heat Transfer Analysis — *University of Tennessee*
Graduate Student — *2017*
- Modeled nozzle geometry and generated a computational mesh using Pointwise
- Developed proficiency with Finite Element (FE) modeling and analysis
- Simulated high-energy gas flows using ANSYS Fluent to assess thermal stress and material limits
- Defined constraints to safely test experimental rocket nozzle

Novel Propellants for Hybrid Rockets — *University of Tennessee*
Undergraduate Student — *2016*
- Co-designed and operated a small-scale hybrid rocket thrust stand
- Authored safety and test documentation to support future research teams
- Prepared technical report and presentation of results comparing different propellants
- Continuously worked with and communicated with supervising professor

Education

Master of Science in Aerospace Engineering — *Knoxville, TN*
University of Tennessee, Knoxville — *May 2024*
- Focus on Computational Fluid Dynamics, Data Science, Numerical Methods

Bachelor of Science in Aerospace Engineering — *Knoxville, TN*
University of Tennessee, Knoxville — *August 2016*