**Liam Barstad**

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**PROFESSIONAL SUMMARY**

Multi-talented software engineer with 5 years of industry experience in software development, big data engineering, and predictive analytics. Creative, diligent, agile, and business-oriented, well-versed in enabling machine learning teams and automating large scale operations

**RELATED TECHNICAL SKILLS**

* **Languages:** Python, Javascript, SQL, Ruby
* **Libraries:** Pytorch, Spark, Airflow, Flask, React, Redis, Neo4j
* **DevOps:** Linux, Docker, MLFlow, Kubernetes, Kubeflow, AWS, GCP
* **Machine Learning:** Reinforcement Learning, Time Series Analysis, Anomaly Detection, Gradient Boosting, Regression, Classification, Unsupervised Learning, Text to Speech
* **Soft Skills and Other:** Agile/Scrum, Leadership, Customer Success, B2B, Object-Oriented Programming, Test-Driven Development

**PROFESSIONAL EXPERIENCE**

**Data Engineer - AT&T**,San Diego, CA August 2021 – Present

* Developed real-time Anomaly Detection for systems monitoring, trained using MLFlow and deployed with Kubeflow
* Created tooling for operations monitoring and ETL, using Flask/React/Airflow/SQL tech stack
* Trained LSTMs in Pytorch and graph-based algorithms in Neo4j for customer journey analysis
* Performed data analysis on behavioral metrics in SQL for root cause analysis and user categorization across a variety of datasets

**Machine Learning Consultant - Align Tech and Finance,** San Diego, CA June 2021 – August 2021

* Developed profitable Deep Reinforcement Learning (DQN/DDPG) solutions in Tensorflow for trading and arbitrage
* Performed quantitative analysis on real-time trade books
* Deployed pipelines to AWS SageMaker and created the infrastructure for the model to make trades

**Research Support Engineer – Quantum Metric**, Denver, CO March 2019 – May 2020

* Generated custom analyses, including a kernel two-sample test in Google Bigquery SQL, for enterprise clients
* Wrote back-end pipelines in Airflow, Kubernetes, and Google Cloud Platform (GCP) for custom reports
* Performed feature extraction in ETL processes supporting the research team, for use in Data Science and Machine Learning on a large-scale behavioral dataset

**Senior Web Developer – Zober**, Denver, CO July 2018 – March 2019

* Lead and collaborated with a team of 4 developers, using agile and SCRUM methodologies, communicating with leadership and actualizing business requirements
* Created the first iteration of a production ecommerce product in Ruby on Rails and React
* Developed authenticated user funnels and subscription pipelines, building the framework for future revenue of the SaaS service
* Automated lead generation and outreach to B2B clients

**RELEVANT PROJECTS**

**Pee Wee Text to Speech**

peewee-tts.liambarstad.com - github.com/liambarstad/peewee-tts

* Generates speech that sounds like the beloved character Pee Wee Herman
* Combination of 3 deep neural networks trained separately, an LSTM encoder that generates the speaker embeddings specific to the character, a Tacotron 2 text synthesizer, which is an attention based deep learning model for generating the mel spectrograms, and a WaveNet vocoder, which transforms the mel spectrogram into the final wave form

**EDUCATION**

**Machine Learning Certification**, University of California, San Diego - 2023

**Back End Development Certification**, Turing School of Software and Design, Denver - 2017