Jordan Deklerk

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Professional Experience

Data Scientist Jun 2020 – Jan 2023
University of Pittsburgh Medical Center *Pittsburgh, PA*

- Developed a BERT style transformer model, pretrained using masked token learning, on EHR claims data for medical code embeddings, achieving a 14% decrease in 30-day re-admissions resulting in $1.3M in savings
- Created a CNN and autoencoder-based deep unsupervised learning model that clustered patients by acute disease sub-types, guiding a managed care program and achieving an estimated $345k in preventative care savings
- Leveraged AWS deep learning docker containers to transition existing machine learning models into production, significantly enhancing model inference and enabling robust real-time prediction capabilities

Data Scientist Dec 2019 – Jun 2020
Health First Health Plans *Rockledge, FL*

- Constructed an ensemble gradient boosted tree model for identifying members at high risk of disenrollment resulting in an outreach strategy that retained 31% of at-risk members, yielding an estimated annual savings of $230k
- Designed an instrumental variables causal model to estimate the price elasticity of Medicare Part D cancer drugs, using plan variation and cost-sharing differences across therapeutic classes to adjust Medicare pricing plans
- Utilized Apache Spark to pre-process hundreds of millions of rows of electronic health records, facilitating robust data insights and enhancing the training of machine learning models

Associate Data Scientist Jun 2018 – Dec 2019
Health First Health Plans *Rockledge, FL*

- Formulated a Bayesian Gaussian process time series model for automated forecasting, successfully projecting monthly healthcare utilization and expenses, resulting in $115k in quarterly savings through budget adjustments
- Produced comprehensive chronic disease analytics reports every quarter and presented to executive leadership, providing a holistic overview of chronically ill sub-populations with recommendations for financial opportunities
- Established and maintained financial reporting processes in SAS around strategic accounts and medicare lines of business

Education

University of Illinois Urbana - Champaign Champaign, IL
Master of Science in Statistics *Aug 2022 – May 2024*

University of Wisconsin - Madison Madison, WI
Master of Science in Economics *Aug 2016 – May 2018*

University of Central Florida Orlando, FL
Bachelor of Arts in Economics and Mathematics *Aug 2013 – May 2016*

Projects

Closing the Amortization Gap in Bayesian Deep Generative Models

- Researched implementing Bayesian neural networks to minimize the amortization gap in VAEs, investigating their potential to approximate the optimal solution to the amortization interpolation problem
- Developed an encoder-decoder deep neural network implementing full Bayesian inference across all latent variables, evaluating computational efficiency and reconstruction MSE across A-VI, F-VI, and constant-VI methods
- Demonstrated that A-VI closes the amortization gap in Bayesian VAEs, boosting reconstruction MSE and ELBO loss on benchmark imaging datasets, while increasing computational speed by up to 300%

Technical Skills

Languages: Python, R, SQL, SAS, STATA
Developer Tools: Azure ML, AWS Sagemaker, Databricks, Spark, Docker, Kubernetes, GCP
Libraries: Huggingface Transformers, PyTorch, Scikit-Learn, TensorFlow, Wandb, Ray, DeepSpeed