Satya Borgohain
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WORK EXPERIENCE

Monash Univesity

Research Fellow (Machine Learning & DevOps)

Clayton, Victoria | Dec 2019 - current

- Developed an NLP narrative extraction method (f1 score 0.86) using Transformers, as applied to 2.8M Australian news articles for a flagship Paul Ramsay Foundation project
- Deployed ForumBrain to production, an NLP tool for automated student forum grading, reducing average processing from 2 hours to 5 minutes
- Implemented modules (7+ countries) for the Monash IP Observatory that performs anomaly detection on internet time-series data of 3M observations per day
- Created high-volume data ingestion and wrangling pipelines on AWS for text (Twitter, Wikipedia, Google), handling > 5M rows
- Led the development of the Melbourne Experiment App for studying post-COVID-19 urban recovery and renewal
- Built a semantic capability mapping tool using text embeddings, for recommendations to senior leadership, improving research discoverability by 45%
- Developed a low-cost, semi-supervised approach for pseudo-labelling text using GPT-3, improving accuracy of simpler ML models with statistical significance < 0.05
- Developed an interpretable neural network, which models high-order feature interactions, improving 42% (classification loss) over dense networks
- Demonstrated viability of Bayesian neural networks to small, tabular data regime over post-hoc calibration methods (p-value of 0.0001 at 0.05 significance level)

MotionAI

Machine Learning Engineer

Melbourne, Victoria | Aug 2018 - Apr 2019

- Developed an MVP for 2D pose estimation and fall detection on edge devices, as applied in the aged care domain, achieving 78% accuracy
- Executed complete end-to-end ML lifecycle: collection, modeling, analysis and deployment phase, reducing project costs by more than 50%

Tata Consultancy Services

Systems Engineer

Nagpur, India | Nov 2015 - Jan 2018

- Led the agile development of an in-house predictive analytics platform (COMPASS)
- Implemented Earned Value Management (EVM) module with suggestive action planning, improving Cost Performance Index (CPI) by 9%
- Coordinated with BAs to implement Root cause analysis model, including anomaly detection (PCA), lowering average delivery times by 11%
- Deployed reporting dashboards for distinct user groups, improving schedule adherence by up to 18%

SKILLS

- Python (NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow/Keras, Flask)
- R (ggplot, tidyverse)
- SQL (MySQL, Postgres, MongoDB)
- JavaScript (ReactJS, d3.js)
- Cloud (AWS, GCP)
- Others: Linux (bash), Git, Tableau, Jupyter
- Natural Language Processing (NLP), regression analysis, hypothesis testing, interpretability (LIME/SHAP), clustering, post-hoc calibration, XGBoost, Random Forest

EDUCATION

Master of Data Science

Monash University

Feb 2018 - Dec 2019

Caulfield, Victoria

High Distinction (GPA: 3.67 / 4.0)

Awards

- Academic Excellence Certificate
- Monash Industry Team Initiative Scholarship
- Faculty of IT International Merit Scholarship

Bachelor of Mechanical Engineering

Nagpur University

Aug 2011 - Jul 2015