RICARDO DE DEIJN

Research Scientist

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github.com/Neatherblok

Committed innovative research scientist with expertise in machine learning, computer vision, detection algorithms, and data visualization. Specializes in advanced object recognition and robust snow detection for harsh environments, enhancing operational efficiency and safety while generating actionable insights across diverse industries.

Work Experience

Post Graduate Data Intern
Sep 2024 - Present

Taylor Corporation | Eden Prairie, MN

- Researched, developed and implemented computer vision AI solutions in a collaborative fashion for printing quality checks and to verify our financial records with scanned invoices received by shipping carriers, reducing processing time by about 80%.
- Improved internal processes by researching and developing machine learning models, including an 80% accurate fraud detection model.
- Implemented AI for efficient data collection in fraud analysis, minimizing manual checks from hours to minutes.

Teacher Assistant
Aug 2023 - Aug 2024

Minnesota State University, Mankato | Mankato, MN

- Supported Professor Bukralia by grading assignments, assisting students, and improving course management in (under)graduate courses increasing student performance by at least 10%.

Junior Data Scientist
Jan 2021 - Sep 2022

YourSurprise | Zierikzee, The Netherlands

- Designed and optimized data pipelines, integrating external APIs to streamline Big Data workflows for real-time data needs, improving efficiency by at least 10%.
- Implementing a new ELT system to replace the old ETL system connecting APIs with Google BigQuery, and Looker. This improved data transfer efficiency, and more options for visualizations, saving at least 10% of time for analytics.

Data Scientist Intern
Feb 2022 - Jul 2022

CIMSOLUTIONS | Best, The Netherlands

- Gained at least 50% proficiency in advanced pre-trained AI model's like YOLO and CenterNet, used for UAV-based trespasser identification on private lands
- Optimized human detection AI algorithm's using past research experience and resilience to improve the pre-trained model's accuracy by 25% while upholding ethical standards.

Intern Business Intelligence
Aug 2020 - Dec 2020

YourSurprise | Zierikzee, The Netherlands

- Balanced tasks such as Business Intelligence research, data analysis, and project work effectively.
- Collected and documented research report information to share the research outcomes with the managers of the company.
- Generated and recorded new research data within the company's infrastructure storage program
- Consulted with the marketing department to gather ideas on how to start the data analysis process on finding the optimum boundaries within the new pricing system

References

Rajeev Bukralia

Associate Professor & Graduate Coordinator
Minnesota State University, Mankato
Email: rajeev.bukralia@mnsu.edu

Michael Hart

Associate Professor
Minnesota State University, Mankato
Email: mike.hart@mnsu.edu

Ahmed 'Ash' Sadek

Data Analytics Manager
Taylor Corporation
Email: ahmed.sadek@taylor.com

Core Skills

Python, SQL, PySpark, R, CUDA, OpenCV, AI & Image Processing, Machine Learning, Image Processing, Deep Learning, Image Segmentation, Model Quantization, Computer Vision, PyTorch, Git, TensorFlow, Docker, Agile, Linux, Distributed Computing, Collaboration, Mentoring, Flexibility, Big Data, Computer Science, Computer Engineering, Prototyping, Software Development, Motivated, Creative, Quick Learning

Education

Minnesota State University, Mankato   Jan 2023 - Dec 2024

Master of Science Data Science

HZ University of Applied Sciences   Aug 2018 - Jul 2022

Bachelor of Science Information Communication Technologies

Minor: Data Science, Computer Science

Languages

English *(fluent)*, **Dutch** *(fluent)*, **German** *(fluent)*

Awards

Best Paper Award   Nov 2024
CADSCOM Conference

Certificates

Camera and Imaging   Jan 2025
Columbia University

Data Structures and Algorithms in Python   Jan 2025
DataCamp

IRB Members - Basic/Refresher   May 2024
CITI Program

2024 Midwest Undergraduate Data Analysis Competition (MUDAC) Participant   Apr 2024
Midwest Undergraduate Data Analysis Competition

2023 Data Derby 3rd Place Advanced   Apr 2023

Publications

Developing a Snow Detection Algorithm Using Spatial Attention for Pedestrian Safety
Dec 2024
ProQuest

Developed a specialized CNN-based snow detection algorithm that outperformed VGG-19 and ResNet-50 models, ensuring quicker real-time performance and improved pedestrian safety. Leveraged synthetic data to augment limited real-world data.

Image Classification for Snow Detection to Improve Pedestrian Safety
Jun 2024
MWAIS Conference

Leveraged computer vision and programming skills in a study using VGG-19 and ResNet-50 CNNs to detect snow on sidewalks, preventing winter injuries among vulnerable groups. Achieved 81.8% accuracy and 0.817 F1 through transfer learning and model ensembling.

Reviewing FID and SID Metrics on Generative Adversarial Networks
Feb 2024
AIMLA Conference

This study evaluates image-to-image GANs using FID and the newer SID metric, showing SID's potential to surpass FID in effectiveness.

Interests

Swimming, Playing Trumpet, Biking, Baking Bread, Learning New Things, Reading, Watching Movies

Additional

- Work Authorization: Authorized to work in the U.S. for any employer. Currently on OPT; eligible for a Green Card in approximately 1.5 years.
- Relocation: Open to relocation nationwide