Daniel Netzl

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Education

JOHANNES KEPLER UNIVERSITY   Linz/Donau, Austria
Master of Science, Artificial Intelligence   October 2023 – Present
- Studying advanced AI theories under the mentorship of experts like Sepp Hochreiter.
- Engaging in a curriculum blending theoretical knowledge with real-world application.

COLUMBIA UNIVERSITY   New York City, United States
Admitted to Master of Science, Data Science   March 2024
- Declined the offer to continue the studies at Johannes Kepler University in Linz.

INTERNATIONAL MANAGEMENT CENTER UNIVERSITY OF APPLIED SCIENCES   Krems/Donau, Austria
Bachelor of Science, Informatics/Data Science   June 2020 – June 2023
1.25 Numerus Clausus (NC)[1]
- Graduated with distinction receiving one of only two scholarships for academic excellence.
- First-ever to score 100% in the Machine Learning course and achieved a 95% grade on the Data Science Capstone Project.
- Final presentation on preserving journalistic integrity by battling the spread of fake news received distinction.
- Elected representative for a cohort of 24 students, where I facilitated communication between faculty and students and organized academic events.
- Tutored groups in Programming II: Led weekly sessions, developed tutoring materials, and provided one-on-one assistance, focusing on advanced Python concepts.

Professional Experience

SIEMENS AKTIENGESELLSCHAFT ÖSTERREICH   Vienna, Austria
Data Scientist   August 2022 – Present
- Processed, analyzed, and visualized sales and smart city data using Python and R.
- Designed complex interactive visualization dashboards using R Shiny and Python Dash for internal and external stakeholders and deployed them using Amazon Web Services.
- Main contributor to multiple data science projects that influenced key corporate decisions.

BG/BRG KEIMGASSE   Mödling, Austria
Informatics High School Teacher   September 2021 – December 2022
- Taught principles of information technologies including introductory programming using Python to five classes of around 20 teenagers each.

LEARN4LIFE OG   Bruck/Leitha, Austria
Tutor and Shareholder   October 2016 – June 2022
- Taught students of all ages Spanish, Accounting, and Informatics.
- Managed over 300 customers and organized timetables of around 10 tutors.

FIRST DIGITAL FINANCE CORPORATION   Manila, Philippines
Data Science Trainee   June 2020 – December 2020
- Worked on a credit risk use case to forecast the probability of potential customers defaulting on their loans.

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[1] Numerus Clausus (NC) is an academic grading scale used in Austria and other German-speaking countries. A score of 1.25 is considered exceptional and is roughly equivalent to a GPA of 4.0 in the U.S. grading system.

Projects

Smart Recommender System for Real-World Configurator (Siemens AG):
- Developed and integrated a smart recommender system into a product configurator using a multi-label classification approach, leveraging scikit-learn for machine learning models and PyTorch for an overparameterized neural network architecture.
- Led the project as the main contributor, conducting weekly discussions and delivering multiple presentations to key stakeholders, including customers.
- Successfully streamlined the configuration process, enhancing user decision-making.

Enhanced Occlusion Removal Using Advanced Computer Vision Techniques:
- Implemented a neural network using a focal stack of images to accurately identify and remove occlusions, enhancing object detection in obscured environments.
- Utilized sequential convolutional layers with Squeeze and Excitation blocks for feature recalibration and progressive upsampling to refine image clarity and detail.
- Tailored the technology for practical use in search and rescue operations.

Heat Pump Efficiency Analysis for Sustainability (Siemens AG & Aspern Smart City Research):
- Analyzed audio and sensor data from heat pump systems for sustainability enhancement.
- Implemented an Auto-Encoder using Keras for anomaly detection.

Spotify Playlist Enrichment through Machine Learning:
- Developed a robust machine learning model using Python and Scikit-learn.
- Enriched Spotify playlists by harnessing a vast dataset of over 6 million songs.
- Employed singular value decomposition and matrix factorization techniques to seamlessly introduce harmonious songs to existing playlists.

Professional Chess Player Prediction using LSTM:
- Crafted an LSTM-based neural network model for predicting 4-player chess professionals from their sequence of opening moves.
- The innovative solution became integral to the customer's gameplay experience.

Automated Mammogram Analysis and Breast Cancer Detection:
- Utilized skimage for Morphological opening and Denoising to refine mammogram images. Developed a Fully Convolutional Network (FCN) for effective tumor segmentation.
- Applied Canny, Watershed, and Active Contours methods to emphasize tumor boundaries.
- Extracted geometric tumor features to distinguish between benign and malignant growths.
- Utilized both classical machine learning algorithms and CNNs for tumor classification.

Thesis on Value Investing with Machine Learning:
- Implemented and critically analyzed multiple ML approaches for long-term value investing.
- Collected and processed over 300 quantitative and qualitative corporate parameters.
- Developed models that simplified stock valuation and demonstrated significant outperformance over benchmark indices.

Volunteering

HEAD OF YOUTH CLUB   Göttlesbrunn, Austria
Accounting, Engagement, Strategic Planning   January 2016 – December 2022
- Served as a key elected member of the local youth club's leadership team for three consecutive terms before transitioning the role to the next generation.
- Strengthened intergenerational bonds, leading and inspiring for active contribution.
- Involved in key decisions regarding the organization of multiple community events.

Test Scores

- **GRE**: 162/170 Quantitative Reasoning – 158/170 Verbal Reasoning – 4/6 Analytical Writing
- **TOEFL**: 29/30 Reading – 29/30 Listening – 26/30 Writing – 26/30 Speaking (110/120)