Patrick Ruoff

Curriculum Vitae

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Relevant Experience

11/2022 -
8/2024

Senior Data Engineer: Swiss Foreign Trade Statistics, FREELANCE, Bern.
Part of two agile teams (18 members) providing data analytics platform for customs and border security business departments. Redesigned ETL architecture for ∼60 data products processing customs and personal data. Improved performance by factor of ∼100. Technical lead in decision making with architects and code review for 12 developers.
Skills: Python, Airflow, PySpark, dbt, Iceberg, SQL, NiFi, Kubernetes, AWS S3, Kafka

1/2022 -
9/2022

Senior Data Engineer: industrial machine manufacturing, INOVEX, Munich.
Part of agile team (∼30 members) providing cloud data platform for industry-leading business departments. Designed and implemented architecture for ∼30 ETL applications and APIs processing global IoT data on a terabyte scale. Deployment of various managed services in hybrid cloud setup. Enablement of client developers. Optimized architecture to save ∼4000€ per month. Knowledge-Sharing for up to 60 colleagues.
Skills: Python, Azure, Databricks, PySpark, SQL, NiFi, Kubernetes, Shell, CI/CD, Terraform

2/2021 -
9/2021

Data Engineer: commercial kitchen appliance manufacturer, INOVEX, Munich.
Part of agile team (6 members) with goal to provide data-driven insights to end-users on globally distributed IoT data of industry-leading client. Designed and implemented architecture for ETL and machine learning applications that process data daily on a giga- and terabyte scale. Full responsibility from raw data collection over processing with machine learning to visualization. Deployment of various managed services in private network on Azure. Enablement of client developers.
Skills: Python, Azure, Databricks, PySpark, SQL, Data Lake, Shell, CI/CD, Terraform

9/2020 -
12/2021

Data Engineer: commercial kitchen appliance manufacturer, INOVEX, Munich.
Designed and implemented architecture for ETL and dashboarding application for IoT data. High focus on security for sensitive laboratory data on Azure. Realized clean software architecture principles for maintainability of 11 Python projects. Reduced processing time by a factor of ∼50. Conducted requirements engineering as main contact for stakeholders.
Skills: Python, Azure, Elasticsearch, Kibana, Shell, CI/CD, Clean Code

10/2020 -
1/2021

Cloud Engineer: commercial kitchen appliance manufacturer, INOVEX, Munich.
Migrated ETL pipelines and web APIs from on-premises to Docker-based services on Azure.
Skills: Azure, Terraform, Azure DevOps, CI/CD, ARM templates, Docker

6/2020 -
9/2020

ML Engineer: commercial kitchen appliance manufacturer, INOVEX, Munich.
Designed and implemented on-premises ETL pipelines and web APIs for ML applications.
Skills: Python, Shell, Gitlab CI/CD, Elasticsearch, Kibana, flask, Clean Code, JavaScript

9/2019 -
4/2020

Guest Researcher, CARNEGIE MELLON UNIVERSITY, Pittsburgh.
Designed and realized data collection pipeline for thermal comfort related data including biosignals and occupant controls. Optimized, deployed and evaluated machine learning models for infrared heating panel control with focus on interpretability. Reduced command frequency by 79% and increased thermal comfort to 89%. Published findings (paper, code, data).
Skills: IoT, Python, scikit-learn, fastai, Swift, Cloud Computing, Expainable AI

10/2018 - 5/2020	**Data Scientist: Student Job**, INOVEX GMBH, Munich. Evaluated machine learning frameworks with focus on tabular data sets. *Skills: extensive Python programming, scikit-learn, TensorFlow, PyTorch, Parquet*
3/2018 - 7/2018	**ML Engineer: Student Project**, DIOSNA, Munich. Designed and implemented dough kneading machine learning model in agile team. Improved productivity by at least 30%. *Skills: Python, scikit-learn, AWS, Swift, CI/CD, presenting in front of hundreds (video)*

Studies

10/2018 - 9/2019	**Data Engineering & Analytics, M.Sc.**, TECHNICAL UNIVERSITY MUNICH. *Grade when cancelled: 1.9* Focus: data engineering, machine learning, distributed systems, deep learning
10/2016 - 4/2020	**Informatics, M.Sc.**, TECHNICAL UNIVERSITY MUNICH. *Final grade: 1.3* Focus: software engineering & architecture, agile project management, machine learning
10/2017 - 3/2018	**Study Abroad**, MULTIMEDIA UNIVERSITY MALAYSIA. Focus: software engineering, software quality
10/2013 - 10/2016	**Informatics, B.Sc.**, TECHNICAL UNIVERSITY MUNICH. *Final grade: 2.3* Focus: software engineering, machine learning, business analytics, database systems

Skills

Coding:	*Expert*: Python, SQL, Shell *Extended*: JavaScript, Java, C# *Basic*: R, Scala, C++, Swift
Azure	Databricks, Data Factory, Functions, ARM, Blob, ADLS, Queues, Fileshare, DevOps, SQL DB, Cosmos DB, App Services, Container Instances, Key Vault, Event Grid, VNet, Logic Apps, Active Directory, Event Hub, Stream Analytics
AWS	S3, EC2, Redshift, Elastic Map Reduce
Others:	*Expert*: Databricks, PySpark, Spark Streaming, Airflow, dbt, Iceberg, Delta, NiFi, Kafka, Docker, CI/CD, Scrum, SAFe, Git, Clean Code, NumPy, pandas, Bash, NoSQL, Jupyter, PostgreSQL, Elasticsearch, Kibana, PyTest, fast learning *Extended*: Terraform, Kubernetes, Flask, Grafana, scikit-learn, matplotlib, MongoDB, Cassandra, Atlassian Stack, UML, Data Mesh *Basic*: sparklyr, HDFS, TensorFlow, PyTorch, Explainable AI

Awards & Certificates

11/2023	**Databricks Certified Data Engineer Professional**, DATABRICKS.
11/2022	**Azure Data Engineer Associate**, MICROSOFT.
11/2022	**Associate Developer for Apache Spark 3.0 (Python)**, DATABRICKS.
1/2021	**Data Engineering Nanodegree**, UDACITY.
10/2019 - 4/2020	**DAAD IFI scholarship**, GERMAN ACADEMIC EXCHANGE SERVICE. For research stay of highly qualified young German researchers in the field of artificial intelligence at excellent partner institutes abroad.