Patrick Hirschi

12.01.1990 | Swiss
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PROFILE SUMMARY

Talented professional with in-depth experience of over 8 years working with clinical data as well as designing, implementing, and maintaining data products and platforms, utilizing most current technologies. Deep knowledge and experience in data processing / streaming technologies to integrate data from disparate systems.

Team player committed to giving staff the education and resources to develop their skills, advance within the company and solve complex problems together.

Highly motivated in further developing my skillset, always keen to meet new people, and to discover new technologies.

Technical Skills:

- <u>Advanced</u>: Microsoft Stack (SQL Server, MS SQL, T-SQL Procedures & Functions, SSIS, SSRS, Power BI, .NET / C#), Microsoft Office (Word, Excel, Powerpoint, Visio, Project)
- <u>Proficient</u>: Open-Source Stack (java, python, .NET Core, Kafka, Spark, Hadoop, Zeppelin), Other Database Technologies (Oracle, PostgreSQL, mySQL, mongoDB), Code Versioning (SVN, GIT)
- <u>Intermediate</u>: Web Development (HTML, CSS, javascript), Linux, Webservices (.NET Framework and .NET Core), Knowledge regarding Server / Storage / Network (Storage Systems, Load Balancer, Failover Clusters, Certificates, Proxy, Web Application Firewalls) for designing and understanding secure and state-of-the-art solution architectures

PROFESSIONAL EXPERIENCE

University Hospital of Zurich   Zurich

Team Lead Engineering – Clinical Data Platform for Research   *Sep 2020 – now (ongoing)*
- ***Key Highlights:***
  - Team Lead for 8-10 internal engineers and 3-5 associated virtual employees
  - Responsibility and decision-making competence regarding methodology, technology, and architecture of the clinical data platform
- ***Key Responsibilities:***
  - Architecture, development, maintenance and administration of the clinical data platform and its underlying data lake, databases, and data marts
  - Manage capacity and workload of the clinical data platform, including planning for additional large data sources, and their impact on the underlying infrastructure
  - Manage support and development activities with software suppliers
  - Responsible for the internal technical work packages related to the Swiss Personalized Health Network (SPHN) for building an infrastructure to enable nationwide use and exchange of health data for research, as well as the work packages of all clinical research projects associated
  - Responsible for the technical implementation of interfaces from USZ to The LOOP Zurich Biomedical Informatics Platform (BMIP) to allow for translational data-driven research across Zurich hospitals
  - Member of multiple decision-making bodies including the Information Security Board, as well as the Software Advisory Board and the Change Advisory Board
  - Provide expert guidance to users in the clinical research domain, who include data science specialists, data analysts and the wider business such as physicians, nurses, and data managers regarding the data availability, clinical and other terminologies (ICD, CHOP, UCUM, SNOMED-CT, LOINC, etc.) as well as the data governance, data protection and IT security
  - Project management (effort estimates, offers, invoices), resource allocation and customer communication
  - Technical and use case documentation (security concept, operating concept, user manuals)

Clinical/R&D Data Platform Specialist – Research Data Service Center   *Dec 2019 – Sep 2020*
- ***Key Highlights:***
  - Developed solution for enterprise-wide distribution of general consent data from patients to ensure the data governance and the conformity to applicable internal directives, laws, and regulations (Web Application and API based on .NET Core)
  - Developed backend and data delivery processes for national SPHN research projects Swiss Personalized Sepsis Study and Population Wide Screen
  - Member of the hospital-wide expert panel for clinical and research projects
- ***Key Responsibilities:***

- Architecture, development, and maintenance of the data integration layer especially the ETL processes from clinical and administrative source systems to the Research Datawarehouse
- Aggregation, cleansing and masking of clinical data to fulfill the requirements of internal and external research projects
- Architecture, development, and maintenance of processes to provide encoded and encrypted health-related data to SPHN (Swiss Personalized Health Network) and internal researchers
- Support the technical development and evolution of master and reference data models for specific data domains
- Provide domain expert guidance and specialist technical support to users in the research domain
- Technical and use case documentation (security concept, operating concept, user manuals)

Datawarehouse Developer – Research Data Service Center *Sep 2018 – Dec 2019*
- ***Key Highlights:***
  - Developed solution for automated data encryption and delivery with PGP and LiquidFiles
- ***Key Responsibilities:***
  - Architecture, development, and maintenance of the data integration layer especially the ETL processes from clinical and administrative source systems to the Research Datawarehouse
  - Aggregation, cleansing and masking of clinical data to fulfill the requirements of internal and external research projects
  - Architecture, development and maintenance of processes to provide encoded and encrypted health-related data to SPHN (Swiss Personalized Health Network) and internal researchers
  - Support the technical development and evolution of master and reference data models for specific data domains
  - Technical and use case documentation (security concept, operating concept, user manuals)

Application Manager / Developer – Clinical Data Management *Jul 2016 – Sep 2018*
- ***Key Highlights:***
  - Developed backend for a near-real-time care dashboard rolled out enterprise-wide and used by 1000+ users (physicians, nurses, etc.) a day
  - Developed solution for traumatology to prefill a case report form for the Swiss and German trauma registry with data from the clinical data platform, as well as a yearly XML export to the registry providers
- ***Key Responsibilities:***
  - Maintenance, second-level support, and coordination of third-level support for clinical data management applications, interfaces, and solutions
  - Testing and Rollout of the developed applications and interfaces
  - Project management
  - Analysis of source systems and interfaces
  - Implementation of ETL processes from clinical and administrative source systems into the Clinical Datawarehouse (Caradigm Intelligence Platform)
  - Technical specifications for data management and data warehouse applications and interfaces
  - Programming and scripting with Microsoft .NET / ASP.NET / C# in Microsoft Visual Studio
  - Writing complex T-SQL queries, views, procedures, triggers, and functions (MSSQL)
  - Intensive use of database management and development tools incl. Business Intelligence (SQL Server Integration Services and SQL Server Reporting Services)
  - Technical and use case documentation (security concept, operating concept, user manuals)

emineo AG   Zurich

Healthcare Consultant *Aug 2015 – Jul 2016*
- ***Key Responsibilities:***
  - Project Management and Consulting of Hospitals
  - Analysis of clinical source systems and interfaces
  - Technical implementation of interfaces, reports, applications / solutions for various clinics (traumatology, infectiology, emergency department)

TEACHING

Swiss Federal Institute of Technology Zurich ETH   Zurich
MAS ETH in digital Clinical Research (MAS ETH diCR) – Real-World Data *2023-now (ongoing)*
- New, innovative and digital approaches to clinical research and their potential in a complex regulatory, ethical and practical environment, as well as the use of Big Data, Artificial Intelligence and Machine Learning, for advancing personalized medicine.

University of Zurich UZH   Zurich
Blockcourse Biomedicine – "Journey into Medical Research" *2023-now (ongoing)*
- Overview of the ethical and legal principles of preclinical and clinical research, including research with data and

samples. Focus on the critical aspects of research projects with data and samples (privacy, information security, consent, ethics, etc.).

EDUCATION

Swiss Distance University of Applied Sciences FFHS Zurich
Certificate of Advanced Studies in Statistical Data Analysis and Data Visualization 2023-now (ongoing)
- Fundamentals of probability theory as well as descriptive and inferential statistics and their applications (with the use of R & Python), with which the most important statistical methods can be applied to solve real-world problems and to identify higher-level relationships (model building, regression and time series analysis, explorative data analysis)
- Using data visualization methods to recognize and convincingly convey the meaning of data (visual representations, animations and interactive graphics, evaluation of visualizations)

Swiss Distance University of Applied Sciences FFHS Zurich
Certificate of Advanced Studies in Machine Learning 2022-2023
- Concepts of Machine Learning Technologies & Methodologies (Information Retrieval, Natural Language Processing, Recommender Systems)
- Classification of data (Naive Bayesfilter e.g. Spam-Filter, Decision Trees, Random Forests, Support Vector Machines, Neural Networks)
- Feature engineering and preprocessing of data

Swiss Distance University of Applied Sciences FFHS Zurich
Certificate of Advanced Studies in Big Data 2022
- Concepts of Big Data Technologies & Methodologies (such as Apache Hadoop, Apache Kafka, Apache Cassandra, Apache Solr, Apache Spark), NoSQL, Document Stores, Object Stores
- Setup and Configuration of a small Big Data Cluster (Hadoop/YARN, Cassandra, Spark, Zeppelin) on a local MacBook with Parallels and 5 virtualized Ubuntu Server machines.
- Implementation of a real-time data stream from the Twitter API v2 with pyspark into a mongoDB to assess the tweet behaviour during governmental, environmental, or social crises.

Bern University of Applied Sciences Biel/Bienne
Bachelor of Science in Medical Informatics 2012 - 2015
- Computer Science, Statistics, Programming, Mathematics, Medical Terminologies and Classifications, Project Management, Ethics, Anatomy and Pathology, Hospital processes and patient pathways
- Achievements:
  - "Prix d'excellence" for the best degree "Silver" in 2015
  - "Prix d'excellence" for the best concept in the bachelor thesis in supply chain management (medication)

OTHER RELEVANT COURSES

Trivadis Training Zurich
Performance Tuning and Optimizing SQL Databases (5 days) 2021
- Official Microsoft Course (M-10987)
- Performance Monitoring, Scheduler, Wait Types, Indexing, Query Plan, Caching, Query Optimizing, I/O Concepts, Concurrency, Transactions, Isolation Levels

University Hospital of Zurich Zurich
Leadership & Communication (7 days) 2020
- Communication skills, pressure handling, conflict resolution, employee engagement, delegation, feedback culture, change management, resource/time/budget planning

Trivadis Training Zurich
Implementing a SQL Data Warehouse (5 days) 2019
- Official Microsoft Course (M-20767)
- Introduction to Data Warehousing, Planning / Designing / Implementing a Data Warehouse, ETL Solutions, Data Quality, Master Data Management, SQL Server Integration Services

Udacity Online
Nanodegree Data Analysis (2 months, 5-10 hrs/week) 2019
- Practical Statistics Apply inferential statistics and probability to important, real-world scenarios, such as analyzing A/B tests and building supervised learning models

- Data Wrangling, gathering, assessing, and cleaning data. Use of Python to wrangle data programmatically and preparing it for deeper analysis.
- Data Visualization with Python. Apply visualization principles to the data analysis process. Explore data visually at multiple levels to find insights and create a compelling story.

Udacity Online
Nanodegree Data Streaming (2 months, 5-10 hrs/week) *2019*
- Fundamentals of stream processing, including how to work with the Apache Kafka ecosystem, data schemas, Apache Avro, Kafka Connect and REST proxy, KSQL, and Faust Stream Processing
- Build real-time analytics applications
- Understand the dimensions of Spark streaming, ingest streaming data to Apache Spark Structured Streaming, and integrate Spark streams into Kafka

University Hospital of Zurich Zurich
Good Clinical Practice (3 days) *2018*
- Concepts, principles, regulations, and guidelines for designing, conducting, and reporting (e.g., safety data, accrual reports, study status, protocol deviations, unanticipated problems, or final data) clinical trials and other clinical research projects.

LANGUAGES & INTERESTS

Languages: German (native), English (fluent), French (proficient)
Interests: Sports, Hiking, Technology, Racing Pigeons