CAREER PROFILE

I have a dual background in computer science and biochemistry, which gives me the ability to understand the data I am processing and to bridge the gap between researchers, medical doctors, and computer scientists. My main expertise is to work with biomedical data and integrate these in a way that makes them usable for data-driven applications. I am specialised in data management and data engineering and in using health data in a secure and GDPR compliant manner.

EXPERIENCES

Chief Medical Information Officer
2021 - Present
Luxembourg Institute of Health, Luxembourg

My mission is to provide and maintain a safe and secure IT ecosystem for researchers and clinicians, where they can collect, store, analyze and share data from different sources, ranging from studies, registries, laboratories, health systems and public datasets. This includes the establishment and maintenance of a national data integration center, in close collaboration with national partners, to enable the gathering, management and dissemination of interoperable health data.

- Design and maintain the IT ecosystem of the LIH in support of its research endeavors
- Provide, develop and maintain software for data collection, annotation, analysis and sharing
- Provide data infrastructure (e.g. data lake, data warehouse)
- Ensure the security and confidentiality of the data in accordance with legal and ethical requirements
- Professional and disciplinary guidance of four separate teams totalling 30 people

Head of Medical Data Integration Center (DIC)
2019 - 2021
Universitätsmedizin Mannheim, Mannheim

As the head of the medical data integration center I lead a team to extract the raw data out of hospital primary systems and refine them for use in secondary research projects.

- Professional and disciplinary guidance of 15 people
- Preparation of project plans and monitoring of their implementation by the teams
- Budgeting, controlling, reporting and forecasting of various projects
- Design, implementation and strategic development of the DIC
- Data transfer from clinical supply systems to a data warehouse and processing of data analysis requests

Data Engineer
2018 - 2019
Universitätsmedizin Mannheim, Mannheim

I worked at the department of Biomedical Informatics to build up the data integration center from scratch.

- Architect for the archiving solution of the research data for the MIRACUM consortium
- Database design and management (PostgreSQL, MySQL)
- Development and orchestration of data pipelines (Airflow)
- Responsible for eCRFs, pseudonymisation and consent management

Software Developer
2016 - 2018
PTA GmbH, Mannheim

Development of software for fully automated clinical lab systems for a client. The software is developed under FDA and the medical device regulatory framework.

- Design and development of a test framework for a project internal programming language (C#, JavaScript)
- Development of an autonomous decision algorithm for immunological test series
- Build Master for the project. Built and maintained the infrastructure to build and automatically test the software
- Agile Software Development using SCRUM
- Extensive experience in backend development (Oracle Database PL/SQL)

PROJECTS

I teach a module in datamanagement at the master level at the faculty for computer science at the Hochschule Mannheim.

Datenmanagement und Archivierung im Umfeld der Forschung - Master Biomedizinische Informatik und Data Science".

PUBLICATIONS AND AWARDS

Here are selected contributions.

- Sucrose synthases are not involved in starch synthesis in Arabidopsis leaves
Fünfgeld MMFF, Wang W, Ishihara H, Arrivault S, Feil R, Smith AM, Stitt M, Lunn JE, Niittylä T.
Nature Plants, 2022

- Award DMEA Nachwuchspreis 2021 (Young Talent Award)
Maximilian Fünfgeld
DMEA Connecting Digital Health Convention, 2021

SKILLS & PROFICIENCY

Python

SQL

Medical Informatics

Data Engineering

Data Management

Data Science

Maximilian Fünfgeld
CMIO

youtube.com/c/Fuenfgeld

Fuenfgeld

Maximilian_Fuenfgeld

Fuenfgeld

@mfuenfgeld

EDUCATION

MSc in Computer Science
Hochschule Mannheim
2017 - 2020

PhD in Biochemistry
Max Planck Institute for Molecular Plant Physiology, Potsdam
2011 - 2016

MSc in Molecular Biology
Göttingen University
2009 - 2011

BSc in Biology
ETH Zürich
2007 - 2011

LANGUAGES

German (Native)

English (Professional)

INTERESTS

Teaching

Boardgames

Cooking