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HEALTH ROADSHOW

www.helmholtz.ai

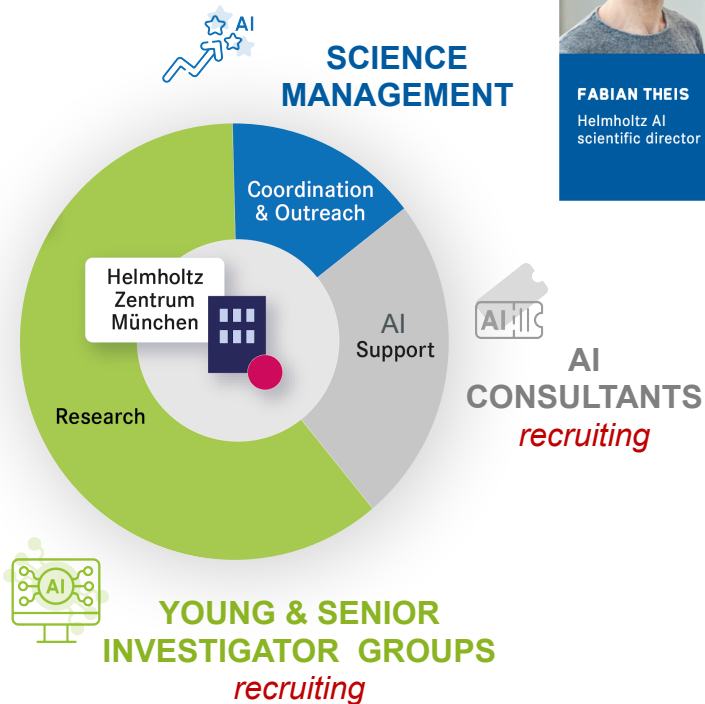HELMHOLTZ AI | ARTIFICIAL INTELLIGENCE COOPERATION UNIT

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AI

2020

Part 2 - Dr Dominik Thalmeier & team

Meet the consultant team for health

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Helmholtz AI

Central Unit at HMGU

SCIENCE MANAGEMENT

Coordination & Outreach

Helmholtz Zentrum München

Research

AI Support

AI CONSULTANTS
recruiting

YOUNG & SENIOR INVESTIGATOR GROUPS
recruiting

FABIAN THEIS
Helmholtz AI scientific director

CHRISTOPH FEEST
Helmholtz AI head of science management

ANGELA JURIK-ZEILLER
Helmholtz AI science manager (on maternity leave)

MEIKE-JANA KALB
Helmholtz AI science manager

KAROLINA WORF
Helmholtz AI science manager

EMMA VAN HOLTHE
ELLIS Munich network and business development manager

ANDREA MIKULANDRA
Helmholtz AI office manager

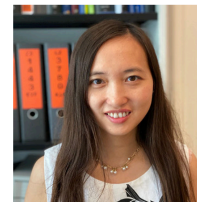**NATALYA SYMONOVA**
Helmholtz AI team assistant

MICHELLE LEDERER
Helmholtz AI team assistant

KILBERTUS GROUP
Reliable machine learning

SEIBOLD GROUP
Open AI in health

PENG GROUP
Artificial intelligence for digital pathology

ALBARQOUNI GROUP
Deep federated learning in healthcare

+?

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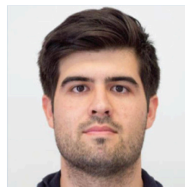## Consultant Team for Health

MARIE PIRAUD
Helmholtz AI consultant team leader @ HMGU

LISA BARROS DE ANDRADE E SOUSA
Helmholtz AI consultant @ HMGU

CHRISTINA BUKAS
Helmholtz AI consultant @ HMGU

ERINC MERDIVAN
Helmholtz AI consultant @ HMGU

RUOLIN SHEN
Helmholtz AI consultant @ HMGU

DOMINIK THALMEIER
Helmholtz AI consultant @ HMGU

+?

reinforcement learning
statistical modeling omics deep learning
dynamics image processing
data integration biomedical
multi-modal machine learning survival prediction
Stochastic random forests
graphs explainable AI
Bayesian inference generative models

consultant-helmholtz.ai@helmholtz-muenchen.de

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Lisa Barros de Andrade e Sousa
Helmholtz AI Consultant @ HMGU

"The world is one Big Data problem"

- @ HMGU since August 2020
- PhD in Bioinformatics, MPI for Molecular Genetics
- BSc & MSc in Bioinformatics, FU Berlin

Research Interests:
- ★ agent-based modeling of host-pathogen population dynamics
- ★ analysis and integration of genomic and epigenetic data sets to understand gene regulation dynamics
- ★ machine learning / explainable AI

Completed & current Vouchers:
- ❖ data normalization for microbiome-virome multiomics data integration analysis
- ❖ automatized classification of tuberculosis diagnosis
- ❖ ML model for CRISPRi guide efficiency prediction in bacteria from genome-wide essentiality screens

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Christina Bukas

Helmholtz AI Consultant @ HMGU

"The way to get started is to quit talking and begin doing."

Walt Disney

- At HMGU since February 2020
- MSc in Biomedical Computing, TUM
- Diploma of Electrical and Computer Engineering, AUTH

Research Interests:
- ★ Medical Image Processing
- ★ c-GANs

Completed & current Vouchers:
- ❖ Heart Volume Estimation in Transthoracic M-mode Echocardiography
- ❖ Automatic Quantification of PA Flow Parameters
- ❖ PySDDR: A python framework for Deep Distributional Regression

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Erinc Merdivan

Helmholtz AI Consultant @ HMGU

" **Difference between Machine learning and AI:**

If it is written in python, it is probably ML

If it is written in powerpoint, it is probably AI "

Mat Velloso

- @HMGU since September 2020
- PhD in Computer Science, CentraleSupelec
- Core Algorithms, IBM Watson
- AI advisor ,DeepSpin for next-gen MRIs

Research Interests:
- ★ Deep learning
- ★ Natural Language Processing
- ★ Reinforcement Learning

Completed & current Vouchers:
- ❖ Enzyme Function Prediction Using Molecule Properties
- ❖ DL model for CRISPRi guide efficiency prediction in bacteria from genome-wide essentiality screens

Ruolin Shen

Helmholtz AI Consultant @ HMGU

"Stop Dreaming,

Start Doing"

- At HMGU since March 2020
- MSc in Electrical and Computer Engineering, TUM
- B. Eng in Electronics and Electrical Engineering, UESTC & UoG

Research Interests:

★ Image segmentation
★ Microscopy images
★ 3D data
★ Deep learning

Completed & current Vouchers:

❖ Particle detection in 3D cellular cryo-electron tomograms with Deep Learning
❖ Automatic cell counting in cell migration experiments
❖ MALIS loss reimplementation and application

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Dominik Thalmeier

Helmholtz AI Consultant @ HMGU

"Some people try to make everything complicated, be the person who tries to make everything simple."

- At HMGU since April 2020
- **Data Science Consulting**, One Logic GmbH
- **PhD** in Theoretical Neuroscience & Machine Learning, Radboud University Nijmegen
- **MSc** in Theoretical Biophysics, LMU Munich

Research Interests:
- ★ Anomaly detection
- ★ Clustering
- ★ Dimensionality reduction
- ★ Stochastic optimal control

Completed & current Vouchers:
- ❖ Clustering of brain activity in fluorescence microscopy videos
- ❖ Anomaly detection in auditory brainstem response data
- ❖ Automated detection of hearing threshold

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Marie Piraud

Head of Helmholtz AI Consultants @ HMGU

"If you torture data long enough,

it will confess"

Ronald H. Coase

Research Interests:
★ Medical computer vision, deep learning
★ Biomedical data analytics
★ Dynamical and statistical modelling
★ Survival analysis
★ Multi-model Data integration

- At HMGU since September 2020
- R&D Digital Healthcare, Konica Minolta
- Image-Based Biomedical Modelling, TUM
- Marie Curie Fellow in Nanophysics, LMU
- PhD in Physics, Universite Paris-Sud
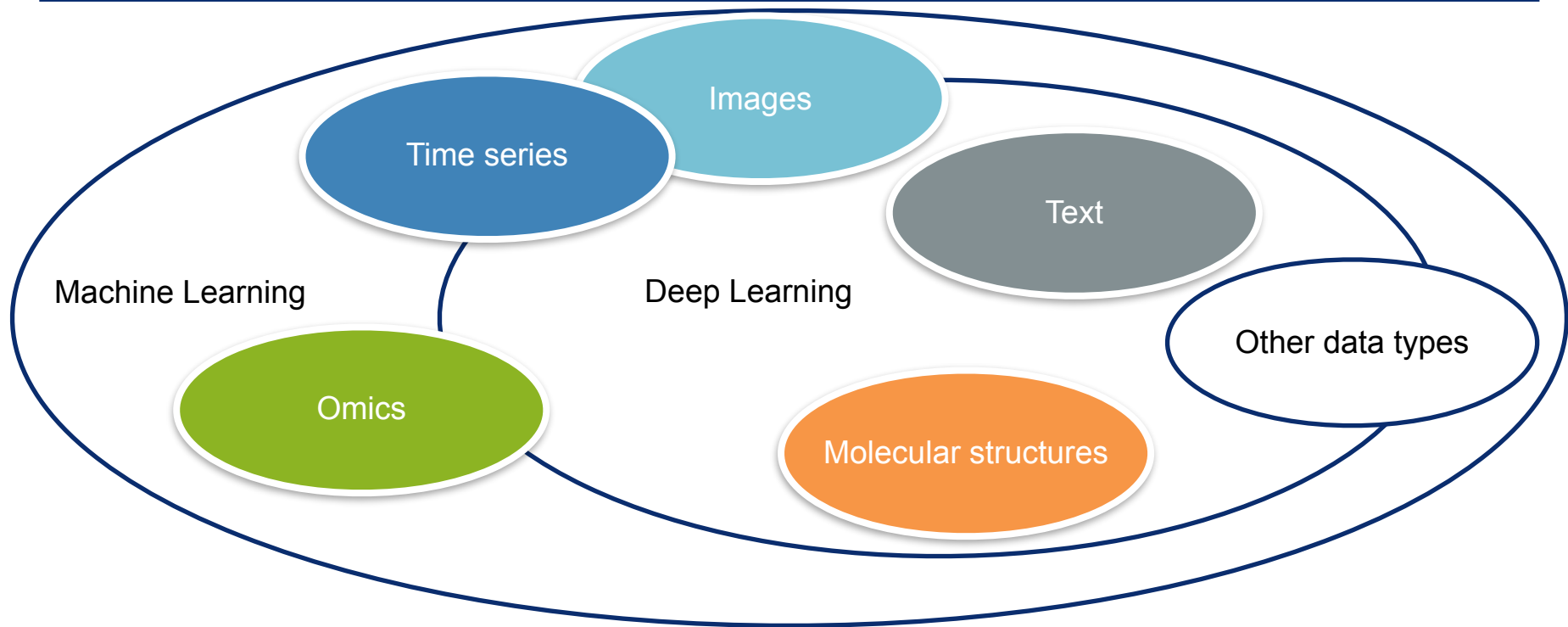- Undergrad in Physics, ENS Cachan & Paris

Coordination and scientific supervision of vouchers

Consultant Team for Health

14 Vouchers on various data types with HMGU, FZJ and HZI

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Want to give it a try?

Voucher Application

consultant-helmholtz.ai@helmholtz-muenchen.de

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