

# RobertKwapich

interdisciplinary data analyst



## info

22nd January 1991  
Katowice, Poland

robert.kwapich@  
gmail.com

## languages

Polish (native)  
English (fluent)  
French (B1/B2)  
German (A2)

## computer skills

Python (+Tensorflow,  
Keras, Scikit-learn)  
Java, Matlab/Octave,  
R, LaTeX, GIT, Unix  
Shell, SGE computing  
cluster

## interests

machine learning & deep learning, artificial intelligence & data science, computational biology, bioinformatics, next generation sequencing, radiation physics

## experience

Jul. 2016 –  
– now

**Oklahoma Medical Research Foundation,  
Gaffney Lab, Oklahoma, USA**

Research Trainee/Technician

*Research Traineeship through Polish-American Fulbright Commission coordinated program. Performing big-data analytics on gathered metagenomic samples: writing and managing data analytics pipelines in bash, writing Python scripts, performing statistical tests and visualizing results in R environment.*

Mar. 2015

**École Polytechnique Fédérale de Lausanne,  
Switzerland**

Research Internship.

BioSemic start-up project for providing new screening micro-engineering-based diagnostic tools for personalized healthcare. Prototype project development: integration of stepper motors into prototype, automatizing laser-mirror alignment in Matlab Simulink environment.

Aug. 2014 –  
– Oct. 2014

**École Polytechnique Fédérale de Lausanne,  
Laboratory of Physics of Living Matter, Switzerland**

Research Internship.

*Trainee at Laboratoire de Physique de la Matière Vivante (Laboratory of Physics of Living Matter). Experience with Atomic Force Microscopy (AFM) imaging and statistical analysis on gathered profiles. Work resulted in publication (see publications)*

Jul. 2013 –  
– Aug. 2013

**Provincial Hospital Megrez; Tychy, Poland  
Department of Diagnostic Imaging and "CLINICA MEDICA" Department  
of Nuclear Medicine**

Internships

*Operating standard X-ray, CT, PET, Medical Ultrasonography. Radiation and patients safety.*

## education

Feb. 2015 –

– Jun. 2017 **M.Sc. Medical Physics** (radiation oncology) University of Silesia in Katowice  
MSc. thesis: “Microbiome study of Systemic Lupus Erythematosus patients through Next Generation Sequencing Methods”, written in cooperation with Gaffney Lab @ Oklahoma Medical Research Foundation.

Oct. 2011 –

– Feb. 2015 **B.Sc. Medical Physics** (electroradiology) University of Silesia in Katowice  
BSc. thesis (in polish): “Multifractal detrended fluctuation analysis (MFDFA) of time series generated through motion capture of paramedic students.”

Sep. 2007 –

– May. 2011 **Information & Communication Technology**  
Śląskie Techniczne Zakłady Naukowe (*Technical High school*), Katowice  
Installation, management, security & diagnostics of operating systems and computer networks. Managing data transmission and storage.

## courses

- 2017-2018 **Deep Learning Specialization** deeplearning.ai  
(*deeplarning.ai*)  
Neural Networks and Deep Learning; Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization; Structuring Machine Learning Projects; Residual and Convolutional Neural Networks; Sequence models: Recurrent Neural Networks (Deep RNN, GRU, LSTM, Bidirectional RNN), Natural Language Processing (Word Embeddings, GloVe, Word2Vec, Sentiment Classification), BEAM search, Attention Models, Speech recognition & Trigger Word Detection
- 2018 **Machine Learning** COURSERA.ORG  
(*Stanford University*)  
Supervised & unsupervised learning, recommender systems, anomaly detection
- 2017-2018 **Java Programming** COURSERA.ORG  
(*University of California, San Diego*)  
Object Oriented Programming in Java
- 2017 **Data Engineering on Google Cloud Platform** COURSERA.ORG  
(*Google Training*)  
Google Cloud Platform Big Data and Machine Learning Fundamentals
- 2016-2017 **Bioinformatics Algorithms** COURSERA.ORG  
(*University of California, San Diego*)  
Finding regulatory motifs, cyclopeptide sequencing, genome sequencing and assembly, biological sequence comparisons, comparing genes, proteins, and genomes (randomized, graph and brute-force algorithms, dynamic programming, combinatorial algorithms)
- 2016-2017 **Genomic Data Science** COURSERA.ORG  
(*Johns Hopkins University*)  
Introduction to Genomic Technologies, Genomic Data Science with Galaxy, Python for Genomic Data Science
- 2016-2017 **Data Science** COURSERA.ORG  
(*Johns Hopkins University*)  
Data Scientist's Toolbox, R programming

## publications

*In progress*

2018

**Whole metagenome sequencing of gut microbiota of patients with Systemic Lupus Erythematosus**

Kwapich, et al. OMRF 2018.

Feb.

2015

**Effects of physiological self-crowding of DNA on shape and biological properties of DNA molecules with various levels of supercoiling.**

Nucleic Acids Research

F. Benedetti, A. Japaridze, J. Dorier, D. Racko, **R. Kwapich**, Y. Burnier, G. Dietler & A. Stasiak

## conferences

Mar. 2017

**Scientific Retreat**

Oklahoma Medical Research Foundation

Poster: *"NGS Microbiome study of patients with Systemic Lupus Erythematosus"*

Oct. 2014

**Swiss Soft Days**

Lausanne, Switzerland

Soft matter conference.

*The community of scientists (material scientists, physicists, engineers, chemists, biologists) working on problems related to Soft Matter in Switzerland is scattered within different departments and under diverse denominations*