Tomasz **Juszczyszyn** PhD DATA SCIENTIST · MATHEMATICIAN ·

Wrocław, Poland

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I am a mathematician and data scientist with scientific background and a passion for artificial intelligence and machine learning.

Education

Wrocław University of Technology

- PhD in Theoretical Mathematics
- Thesis on behaviour of Feller processes in smooth domains.
- Working in a large research team
- Participating and presenting research results on many conferences SPA Oxford, SPA Goteborg, XV Probability Conference in Bedlewo, Summer School on Levy Processes in Zurich, and many more
- Rector's scholarship for academic performance (2015 2016)
- Grade A scholarship for PhD candidates (2016 2019)
- Graduated with honours

Wrocław University of Technology

M.S. IN THEORETICAL MATHEMATICS

- Thesis on estimating hitting times of points for jump-type stochastic processes.
- GPA: 5.11, Diploma Grade: 5.5 (Grade Range: 2-5.5)
- Developing R and Matlab programming skills
- Learning stochastic processes (Wiener, Poisson, Markov chains)
- Rector's scholarship for academic performance (2012 2015)
- Wrocław University of Technology

B.S. IN MATHEMATICS

- Worked in R, Wolfram Mathematica
- Individual Course of Studies (2010 2013)
- GPA: 5.13, Diploma Grade: 5.5 (Grade Range: 2-5.5)
- Rector's scholarship for academics performance (2009 2012)

Publications

- Hitting times of points for symmetric Lévy processes with completely monotone jumps, with 2015
- Mateusz Kwaśnicki, Electronic Journal of Probability
- 2017 Martin Kernels for Markov Processes with Jumps, with Mateusz Kwaśnicki, Potential Analysis
- Decay rate of harmonic functions for non-symmetric strictly α-stable Lévy processes, 2019 arXiv:1912.09602

Presentations

Zürich Spring School on Lévy Processes	Zürich, Switzerland
Presenter	Mar. 2015
Presented results about times of hitting points by a family of symmetrical stochastic processes	
38th Conference on Stochastic Processes and their Applications)	Oxford, UK
Presenter	Jul. 2015
Presented results about times of hitting points by a family of symmetrical stochastic processes	
XV PROBABILISTIC CONFERENCE	Bedlewo, Poland
Presenter	May 2018
Presented results about the decay rate of harmonic functions next to the boundary of the harmonicity set	
40th Conference on Stochastic Processes and their Applications)	Gothenburg, Sweden
Presenter	Jun. 2018
Dresented results about the descurpts of barmanic functions pout to the baundary of the barmanicity act	

TOMASZ JUSZCZYSZYN · RÉSUMÉ

Presented results about the decay rate of harmonic functions next to the boundary of the harmonicity set

Wrocław, Poland Oct. 2012 - Sep. 2015

Wrocław, Poland

Oct. 2009 - Jul. 2012

Oct. 2015 - Nov. 2024

Wrocław, Poland

Skills ____

Programming	Python - FAST API, PyTorch, PyTorch Lightning, Pandas, Numpy, SK-Learn, XGBoost, Transformers, Plotly, Seaborn, Sphinx, Hydra, MLFlow; SQL; Javascript; React		
DevOps	Cloud - AWS: Fargate, EC2, SQS, S3, Lambda; DevOps tools - Terraform		
Team Leadership	Experience in conducting team of developers in SCRUM method, great interpersonal skills, experience in project		
	management tools - Jira, Confluence, Bitbucket, Gitlab		
ML areas	computer vision, natural language processing, mathematical modeling		
General IT	Git, DVC, docker, docker-compose, AWS, Google Cloud		
Languages	Polish - native, English - fluent, Spanish - beginner/communicative, German - beginner/communicative		

Experience

Stermedia

FULL STACK PROJECT ARCHITECT AND DEVELOPER

- Creating an end-to-end project to detect depression based on audio and video signals
- Preparing the architecture of the systems
- Creating models to work with audio signals
- Key technologies used:

Azure: Azure ML Studio and other related services;

Nomtek

FULL STACK PROJECT ARCHITECT AND DEVELOPER

- Created a PoC for national sports team that analyses and recognises athletes moves from the video
- Created a tool to annotate the data and guided a team of annotators throughout the project
- Created a tool to detect an athlete in the picture along with his body parts positions
- Created a tool to classify the move base on the sequence of frames with detected athlete position
- Created a simple React App to present the work of PoC
- Key technologies used: Python: Sklearn, FastApi, React, Postgres, Minio AWS: EC2, S3;

Identt

SENIOR DATA SCIENTIST

- Part of the team working on liveness detection
- Designing and implementing a tool to detect deep fake videos.
- Designing and implementing a tool to detect an rPPG signal (pulse) of a person in the video to detect if the person is living or not printed mask detection.
- Key technologies used: Python: Pytorch, Hydra, Mlflow, Neptune, FastApi AWS: EC2, S3;

Abastroke

ML TEAM LEAD

- Leading the team in AI project developing AI system to suggest rehabilitation methods for people suffering from stroke.
- Conducting the project in SCRUM method
- Creating the architecture and data pipelines
- Leading the team on programming side
- Collaborating with different teams in the project doctors, developers, UX designers.

 Key technologies used: Python: Sklearn, DVC, Mlflow, FastApi AWS: EC2, S3, Fargate; Devops: Terraform; Project management: Jira, Confluence, Bitbucket; Wrocław

Jun 2023 - present

Wrocław

Apr Jul - Sep 2023

Wrocław

Apr 2023 - Dec 2023

Kraków

Apr 2022 - Feb 2023

ChessGrow

SENIOR DATA SCIENTIST

- Leading the team in AI project involving chess piece detection for an AR application. Tasks involved conducting the project in SCRUM method, creating the architecture and data pipelines, leading the team on programming side.
- Constructing Data Pipelines and AI architecture for large marketing company
- Key technologies used:
- Python: Sklearn, Mlflow, FastApi;

AWS: EC2, S3, Fargate;

Stermedia

DATA SCIENTIST

- Creating an end-to-end podcast segmentation model for a media company.
- Creating a type (interview/discussion/magazine) classifier for text data taken from podcasts for a media company.
- Creating a topic classifier for text data taken from podcasts for a media company.
- Organizing and supervising the annotation processes.
- Preparing a pipeline for medicine and drug demand prediction for a large medical company.
- Creating an end-to-end AI system for scraping startup data from the internet, creating a database and preparing the data for AI processing.
- Creating an end-to-end AI model recognising website content and classifying it into one of chosen categories.
- Creating a predictive model, data pre-processing, training a model for a taxi company.
- Creating a concept of a pipeline for an improved door-to-door delivery process.
- · Creating models to detect and extract high voltage lines.
- Creating machine learning models that provide stock utilization prediction and error detection on an assembly line.
- Implementing object detection algorithm for a martech company.
- · Analyzing logistics, stock levels and predicting demand for manufacturing company.
- Key technologies used:
- **Python**: TensorFlow, Django, Keras, PyTorch, gensim, transformers, spaCy, NLTK, LightGBM, fuzzywuzzy, imgaug, OpenCV, LightGBM, XGBoost, scikit-learn, Celery, Flask, RabbitMQ;

AWS: EC2, S3;

Stermedia

JUNIOR DATA SCIENTIST

- Developing an algorithm to detect text in a picture and transcript it to a digital version.
- Preparing a framework to detect cancer cells in a presented image.
- Preparing a framework to produce improved credit scoring models for banking using additional data.
- Developing an e-commerce application to manage marketing expenses.
- Key technologies used:
 - **Python**: LightGBM, PyTorch, OpenCV, LightGBM, XGBoost, scikit-learn, Flask;
 - R: shiny, DT, shinydashboard, tidyverse, shinyjs, dygraphs, htmlwidgets, plotly, caret;

Wrocław University of Science and Technology

Researcher

- Working in a large research team focusing on stochastic processes and their applications.
- Improving state of the art research in stochastic processes.
- Using analytical approach to perform scientific hypothesis testing.
- Teaching groups of foreign students, preparing exams.
- Developing R and Matlab programming skills
- Participating and presenting research results on many conferences SPA Oxford, SPA Goteborg, XV Probability Conference in Bedlewo, Summer School on Levy Processes in Zurich, and many more

Honors & Awards.

INTERNATIONAL

- 2019 3rd place, Kaggle days Dubai
- 2019 **9th place**, Kaggle days China

NATIONAL

1999
1st place, "Jester of the month" (kawalarz miesiąca) in primary school club twice in a row.
Achievement never repeated by anyone.

Wrocław, Poland

Dubai, UAE

Biejing, China

Oct 2021 - Apr 2022

Gliwice

Wrocław

Wrocław

Sep 2018 - Jun 2019

Jul. 2015 - Apr. 2020

Interests

November 18, 2024

Wrocław

Jun 2019 - Nov 2021

Travelling	Hitchhiking, traveled around the world
Sport	Soccer, skiing

Music Playing guitar, learning piano and harmonica