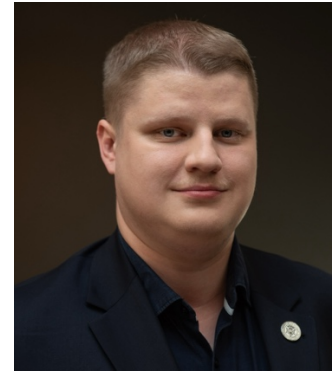# CURRICULUM VITAE

Name and surname:	**Maciej Szymkowski**
Date and place of birth:	12.01.1994r, Białystok, Poland
Nationality:	Polish
Address:	39 Nadbużańska, 15-161 Białystok, Poland
Mobile phone:	(48) 534 526 379
E-mail address:	szymkowskimack@gmail.com
Social media:	https://www.linkedin.com/in/maciej-szymkowski-75481a228/

EDUCATION

10.2018 – 06.2024

Białystok University of Technology
Faculty of Computer Science, Information Technology, 3rd degree studies (doctoral), ABD (no degree awarded)

- An Award for the Best Student granted by Białystok University of Technology Rector in academic year 2018/2019.
- An Award for the Best PhD Student granted by Białystok University of Technology Rector in academic year 2019/2020.
- Białystok University of Technology Rector scholarship for the best PhD students in academic years 2018/2019, 2019/2020 and 2020/2021.
- Doctoral thesis opened on 10.01.2020; Thesis topic: "Machine Learning procedures in multimodal biometrics system using finger -print, -vein and -geometry".

02.2017 – 06.2018

Białystok University of Technology
Faculty of Computer Science, Information Technology, 2nd degree studies (masters) – degree: M.Sc. B.Eng. – Result: 5.5 (Excellent)
Specialization: Software Engineering

- Chairman of Biometrics and Signal Analysis / Processing Students Research Group over the period 2017 – 2018.
- Białystok University of Technology Rector scholarship for the best students in academic years: 2016/2017 and 2017/2018.
- Polish Minister of Science and Higher Education award for scientific work in academic year 2017/2018.

10.2013 – 02.2017

Białystok University of Technology
Faculty of Computer Science, Information Technology, 1st degree studies (engineering) – degree: B.Eng. – Result: 5.5 (Excellent)

- Chairman of Biometrics and Signal Analysis / Processing Students Research Group over the period 2015 – 2017.
- Białystok University of Technology Rector scholarship for the best students in academic years: 2014/2015, 2015/2016, 2016/2017.
- Faculty of Computer Science Council member in academic year 2016/2017 (one semester).
- Faculty of Computer Science Scholarship Commission member in academic years: 2014/2015, 2015/2016.
- Faculty of Computer Science Quality of Education Commission member in academic year 2015/2016.

09.2010 – 06.2013

I-st Adam Mickiewicz High School in Białystok
Specialization: Mathematics, Information Technology and Physics

PROFESSIONAL EXPERIENCE

06.2024 - now **Hemolens Diagnostics**
Position: Senior AI Engineer

11.2022 – 05.2024 **Łukasiewicz – Poznań Institute of Technology**
Position: Senior Researcher for Artificial Intelligence Developer (11.2022 – 12.2023), Head of Artificial Intelligence Division (01.2024 – 05.2024)

- Implementation of different web applications with Fast API, Elastic Search and Angular
- Implementation of Computer Vision-based solutions. Analysis of diversified types of data – also medical images (e.g., cardiology images and retina color images).
- Participation in research grants – Horizon Europe, NCBiR and Erasmus+
- Preparation of grant proposals (Horizon Europe, NCN, PARP and NCBiR)
- The general topic of the research conducted at that position is related to Computer Vision and Artificial Intelligence. I am responsible for preparation of the publications based on the obtained results. My responsibilities also include planning of the experiments (with usage of Machine Learning and AI) as well as preparation of the ready-to-deploy models (managed with MLFlow).

03.2022 – 12.2022 **Sano Centre for Computational Medicine – International Research Foundation**
Position: Scientific Software Engineer

- Implementation of diversified computer vision and artificial intelligence algorithms. Design and implementation of the simulation models. Working with medical data – both 2D and 3D.
- Preparation of the seminars. Analysis of the recent knowledge state based on diversified research databases.
- Participation in the conferences and research seminars.

02.2022 – 10.2022 **AGH University of Science and Technology**
Faculty of Physics and Applied Computer Science
Position: Lecturer

- Conducting laboratory classes: Measurement Data Analysis, Object programming, Introduction to software development, Object Programming 2, Large Scale Computing, Parallel Algorithms

12.2021 – 02.2022 **Wroclaw University of Science and Technology**
Faculty of Computer Science and Management
Position: Junior Researcher in CLARIN-PL project

- Analysis and implementation of the models based on Graph Neural Networks (GNN) and Graph Convolutional Neural Networks (GCN) within long texts in Polish and English.

03.2021 – 09.2022 **Warsaw University of Technology**
Faculty of Electronics and Information Technology
Position: Neural Networks Engineer (03.2021 – 01.2022), Research Assistant (02.2022 – 09.2022)

- Implementation and testing of diversified neural networks models for specific features detection of the observed objects. Participation in the project funded by Polish National Centre for Research and Development (NCBiR).
- Conducting laboratory classes (Introduction to Artificial Intelligence, Efficient way to software design) and participation in the research.
- Supervision of B.Sc. Eng. Theses – both in Polish and English

01.2021 – 10.2022 **SoftServe Ltd.**
Position: Research Engineer

- Participation in the Horizon 2020 European Union project – "TOUCHLESS.AI". Working under evaluation of the emotions and the ways to transfer them in the digital world (also it relates to human touch).
- State of the art analysis and implementation of diversified solutions related to blood oxygenation contactless evaluation based on human face image.

- Participation in preparation of research papers – send to journals from JCR list and to world-class conferences.

07.2020 – 10.2021   **Fuero Games Ltd.**
Position: Machine Learning Engineer

- Analysis and implementation of diversified algorithms connected with image processing for object detection and its segmentation. For this aim both Machine Learning (ML) and Deep Learning (DL) were used.

01.2020 – 10.2021
11.2021 – 03.2022   **Nextsell Ltd.**
Position: Scientific Leader

- Analysis and implementation of diversified intelligent algorithms connected with automatic speech recognition (ASR) and text to speech generation (TTS) with computer resources and computing power.

01.2020 – 09.2021   **BikeHud Ltd.**
Position: Chief Executive Officer (CEO)

- Daily company management and coordination of all activities in Hub of Talents 2 project (BikeHud is a participant of this project whilst Białystok Science and Technology Park is coordinator).
- Analysis and implementation of the algorithms connected with automatic video recognition and all objects visible in it.

10.2019 – 06.2021   **Łomża State University of Applied Sciences**
Position: Lecturer

- Conducting lectures as academic teacher: Programming Basics, Information Technology, IT Projects Management, Programming Technologies, Advanced Software Engineering, Computer Systems Security, Internet Applications Programming.
- Conducting laboratory classes as academic teacher: Information Technology, Object Programming, Programming Technologies, Advanced Software Engineering, Team Project II, Fundamentals of Databases, Internet Applications Programming.

09.2019 – 09.2020   **Symmetra Ltd.**
Position: Software Developer

- Working under web application with Python, Java Spring and Java Spring Boot frameworks.
- Creation of applications frontend side with AngularJS, Angular 8, Angular 10.
- Creation of documentation and automatic tests in Spring environment.

09.2019 – 06.2021   **Technikum Programistyczne (INFOTECH) in Białystok**
Position: Teacher

- Conducting classes: Basics of programming, Code Version Systems, Object Programming, Software design, Testing, and documentation of the project.

10.2018 - now   **Białystok University of Technology**
Faculty of Computer Science, Department of Digital Media, and Computer Graphics
Position: Research Assistant

- Conducting laboratory classes as academic teacher: Wireless Networks, Computer Networks Safety, Principals of Biometrics, Programming Techniques, Computer Architecture, Signal Processing, Computer Graphics, Programming Web Applications in ASP .NET MVC, Computer Networks, Operating Systems Principles, IT projects management, Fundamentals of Electronics.
- Taking part in seminars and consultations.
- Member of biomedical sensors group in project "Sensor system in vehicles to recognize the state after an accident with information transmission to the e-Call emergency desk" financed by Polish National Center for Research and Development (NCBiR).
- Participation in preparation of applications for grant funded by Horizon 2020 EU program.

	- Preparation of application for grant Preludium funded by Polish National Center of Science (NCN).
10.2017 – 06.2018	**Bialystok University of Technology** **Faculty of Computer Science, Department of Digital Media, and Computer Graphics** *Position: Research Assistant (Intern)*

- Conducting laboratory classes as academic teacher: Principles of Biometrics, Signal Processing.
- Taking part in preparation of lectures in: Principles of Biometrics, Signal Processing.
- Taking part in seminars and consultations.
- Member of biomedical sensors group in project "Sensor system in vehicles to recognize the state after an accident with information transmission to the e-Call emergency desk" financed by Polish National Center for Research and Development (NCBiR).

05.2017 – 07.2018	**Symmetra Ltd.** *Position: Junior Software Developer*

- Programming languages: Java, Python, C#.
- Frameworks: GWT, Vaadin, WPF, Angular 5, Java Spring, Django.
- Other solutions: Apache Solr and Scrappy.

07.2016 – 04.2017	**Transition Technologies PSC** *Position: Junior Java Developer*

- Programming languages: Java, C#.
- Other solutions: PTC Windchill, PTC ThingWorx.
- Conducting laboratory classes and lectures - Internet of Things at Białystok University of Technology, Faculty of Computer Science – academic year: 2016/2017 (one semester).
- Software development methodologies and systems: Jira, SVN.

1.07 – 31.07.2015	**Białystok University of Technology** **Faculty of Computer Science, Laboratory of Technical Informatics** *Position: Intern in Laboratory of Technical Informatics*

- One-month intern.
- Development of biometrics identification and verification algorithms.
- Examination of different biometrics traits and possibilities to use them in human recognition process.
- Implementation and conducting experiments over own solutions and different modifications of existing algorithms.

CERTIFICATES

TOEIC – B2 (Upper-intermediate)	**Result:** 93,4%	**Licence:** GOLD218730	**Date:** June 2016
Cambridge FCE – C1 (Advanced)	**Result:** 94,7%	**Licence:** B0500134	**Date:** September 2019

TRAINING COURSES

8.07 – 17.07.2015	**"Summer school on medical and biometrical image analysis with the optimization for cloud and parallel programming"** *Organizer: Stanisław Staszic AGH University of Science and Technology in Cracow and Motorola Solutions Poland department in Cracow.*
6.04.2016	**"Mobile applications safety – Android Security Workshop"** *Organizer: Białystok University of Technology and Samsung Poland department in Warsaw.*
02.2018	**"Basics of Biometrics and Telecare"** *Organizer: Białystok University of Technology, Faculty of Computer Science and Motorola Solutions Poland department in Cracow.*

RESEARCH PAPERS

1   16.09.2016   **„A Multimodal Biometric User Identification System Based on Keystroke Dynamics and Mouse Movements"**
Authors: Piotr Panasiuk, **Maciej Szymkowski**, Marcin Dąbrowski, Khalid Saeed
In: *K. Saeed, W. Homenda (Eds.) – „Computer Information Systems and Industrial Management, 15th IFIP TC8 International Conference, CISIM 2016, Vilnius, Lithuania, September 14-16, 2016, Proceedings"*

2   17.03.2017   **„Two-step Eye Diagnostic System Based on Retina Tomography and Optical Coherence Tomography"**
Authors: **Maciej Szymkowski**, Emil Saeed, Khalid Saeed
In: *„The 4th International Doctoral Symposium on Applied Computation and Security Systems, ACSS 2017, Patna, India, March 17-19, 2017, Proceedings"*

3   16.06.2017   **„A Multimodal Face and Fingerprint Recognition Biometrics System"**
Authors: **Maciej Szymkowski**, Khalid Saeed
In: *K. Saeed, W. Homenda, R. Chaki – „Computer Information Systems and Industrial Management, 16th IFIP TC8 International Conference, CISIM 2017, Białystok, Poland, June 16-18, 2017, Proceedings"*

4   15.09.2017   **„A Novel Approach to Fingerprint Identification Using Method of Sectoralization"**
Authors: **Maciej Szymkowski**, Khalid Saeed
In: *„IEEE Proceedings, 2017 International Conference on Biometrics and Kansei Engineering, Kyoto, Japan, September 15-17, 2017"*

5   02.02.2018   **„A Novel Approach of Retinal Disorder Diagnosing Using Optical Coherence Tomography Scanners"**
Authors: **Maciej Szymkowski**, Emil Saeed
In: *„Springer Transactions on Computational Science XXXI"*

6   9.02.2018   **"The Concept of In-Vehicle System for Human Presence and Their Vital Signs Detection"**
Authors: Anna Łupińska-Dubicka, Marek Tabędzki, Marcin Adamski, Mariusz Rybnik, Mirosław Omieljanowicz, Andrzej Omieljanowicz, **Maciej Szymkowski**, Marek Gruszewski, Adam Klimowicz, Grzegorz Rubin, Khalid Saeed
In: *„The 5th International Doctoral Symposium on Applied Computation and Security Systems, ACSS 2018, Calcutta, India, February 9-11, 2018, Proceedings"*

7   05.2018   **"Retina Tomography and Optical Coherence Tomography in Eye Diagnostic System"**
Authors: **Maciej Szymkowski,** Emil Saeed, Khalid Saeed
In: "Advanced Computing and Systems for Security vol. 5"

8   27.09.2018   **"Finger veins feature extraction algorithm based on image processing methods"**
Authors: **Maciej Szymkowski**, Khalid Saeed
In: *"17th IFIP TC8 International Conference CISIM 2018, Olomouc, Czech Republic, September 27 – 29, 2018, Proceedings"*

9   27.09.2018   **"Accident Simulation for Extended eCall System Without Integration in Existing Car Onboard Systems"**
Authors: Mirosław Omieljanowicz, Adam Klimowicz, Grzegorz Rubin, Marek Gruszewski, Łukasz Zienkiewicz, Anna Łupińska-Dubicka, Marek Tabędzki, Marcin Adamski, Mariusz Rybnik, **Maciej Szymkowski**
In: *"17th IFIP TC8 International Conference CISIM 2018, Olomouc, Czech Republic, September 27 – 29, 2018, Proceedings"*

10   24.09.2018   **"Finger feature extraction with artificial neural network and image processing methods"**
Authors: **Maciej Szymkowski**, Khalid Saeed
In: *"21st International Multi-Conference on Advanced Computer Systems, Międzyzdroje, Poland, September, 24 – 26, 2018, Proceedings"*

11   24.09.2018   **"Vehicle Passengers Detection for Onboard eCall-Compliant Devices"**
Authors: Anna Łupińska-Dubicka, Marek Tabędzki, Marcin Adamski, Mariusz Rybnik, **Maciej Szymkowski**, Mirosław Omieljanowicz, Adam Klimowicz, Grzegorz Rubin, Marek Gruszewski, Łukasz Zienkiewicz
In: *"21st International Multi-Conference on Advanced Computer Systems, Międzyzdroje, Poland, September, 24 – 26, 2018, Proceedings"*

12 01.2019 **„The Conceptual Approach of System for Automatic Vehicle Accident Detection and Searching for Life Signs of Casualities"**
Authors: Anna Łupińska-Dubicka, Marek Tabędzki, Marcin Adamski, Mariusz Rybnik, Mirosław Omieljanowicz, Andrzej Omieljanowicz, **Maciej Szymkowski**, Marek Gruszewski, Adam Klimowicz, Grzegorz Rubin, Khalid Saeed
In: R. Chaki, A. Cortesi, K. Saeed, N. Chaki (Eds.) – „Advanced Computing and Systems for Security vol. 8", Springer Advances in Intelligent Systems and Computing, pp. 75-91

13 08.02.2019 **„An Approach to Automatic Hard Exudate Detection in Retina Color Images by Telemedicine System Based on d-Eye Sensor and Image Processing Algorithms"**
Authors: Emil Saeed, **Maciej Szymkowski**, Khalid Saeed, Zofia Mariak
In: MDPI Sensors, vol. 19, issue 3, https://doi.org/10.3390/s19030695

14 12.03.2019 **"A Novel Approach to Human Recognition Based on Finger Geometry"**
Authors: Maciej Szymkowski, Khalid Saeed
In: *„The 6th International Doctoral Symposium on Applied Computation and Security Systems, ACSS 2019, Calcutta, India, March 12-13, 2019, Proceedings"*

15 22.05.2019 **„Uczenie maszynowe w detekcji zmian patologicznych na obrazach okulistycznych" (eng. „Machine learning in pathological changes detection in ophthalmic images")**
Authors: Maciej Szymkowski, Khalid Saeed, Emil Saeed
In: XXVI Warsztaty Naukowe PTSK 'Symulacja w badaniach i rozwoju', 22-25.05.2019, Supraśl

16 22.05.2019 **„Układ żył w palcu i odcisk palca w multimodalnym systemie biometrycznym" (eng. „Finger veins and fingerprint in multimodal biometrics system")**
Authors: Maciej Szymkowski, Khalid Saeed
In: XXVI Warsztaty Naukowe PTSK 'Symulacja w badaniach i rozwoju', 22-25.05.2019, Supraśl

17 17.06.2019 **"A simple algorithm for hard exudate detection in diabetic retinopathy using spectral-domain Optical Coherence Tomography"**
Authors: Maciej Szymkowski, Emil Saeed, Khalid Saeed
In: *"The 36th International Conference on Computer Graphics, CGI 2019, Calgary, Canada, June 17-20, Springer Lecture Notes in Computer Science Proceedings"*

18 19.09.2019 **"An Algorithm for Exact Retinal Vein Extraction"**
Authors: Maciej Szymkowski, Dawid Najda, Khalid Saeed
In: *K. Saeed, R. Chaki, V. Janev (Eds.) – „Computer Information Systems and Industrial Management, 18th International Conference, CISIM 2019, Belgrade, Serbia, September 19-21, 2019, Proceedings", Springer Lecture Notes in Computer Science, pp. 72-83.*

19 01.2020 **"A Novel Approach to Human Recognition Based on Finger Geometry"**
Authors: Maciej Szymkowski, Khalid Saeed
In: *Rituparna Chaki, Agostino Cortesi, Khalid Saeed, Nabendu Chaki (Eds.) – „Advanced Computing and Systems for Security, vol. 10", Springer Advances in Intelligent Systems and Computing, 996, pp. 57 – 69, 2020.*

20 17.02.2020 **"In-Car eCall Device for Automatic Accident Detection, Passengers Counting and Alarming"**
Authors: Anna Łupińska-Dubicka, Marek Tabędzki, Marcin Adamski, Mariusz Rybnik, Mirosław Omieljanowicz, **Maciej Szymkowski**, Marek Gruszewski, Adam Klimowicz, Grzegorz Rubin, Khalid Saeed
In: *M. Gavrilova, C. J. Tan (Eds.) – „Springer Transactions on Computational Science XXXV", pp. 36 – 57.*

21 28.02.2020 **"Fingerprint and Keystroke Dynamics Fusion in multimodal biometrics system"**
Authors: Maciej Szymkowski, Patryk Milewski, Khalid Saeed
In: *Rituparna Chaki, Agostino Cortesi, Khalid Saeed, Nabendu Chaki (Eds.) – "Advanced Computing and Systems for Security, vol. 11", Springer Advances in Intelligent Systems and Computing, 1178, pp. 67-82, 2020.*

22 21.07.2020 **"A Novelty Approach to Retina Diagnosing using Biometrics techniques with SVM and clustering algorithms"**
Authors: Maciej Szymkowski, Emil Saeed, Mirosław Omieljanowicz, Andrzej Omieljanowicz, Khalid Saeed, Zofia Mariak
In: *IEEE Access, vol. 8, 2020, pp. 125849 – 125862, DOI: 10.1109/ACCESS.2020.3007656*

23 10.08.2020 **"Conceptual Approach for Multimodal Biometrics FPGA-based Security System"**
Authors: Maciej Szymkowski, Khalid Saeed
In: 3rd American University in Emirates International Research Conference – "Transition to Knowledge Economy. Challenges, Smart Opportunities and Innovation", 8-11.08.2020, Dubaj, UAE

24 25.08.2020 **"A Novel Extension for e-Safety Initiative Based on Developed Fusion of Biometric Traits"**
Authors: Khalid Saeed, Marcin Adamski, Adam Klimowicz, Anna Łupińska-Dubicka, Mirosław Omieljanowicz, Grzegorz Rubin, Mariusz Rybnik, **Maciej Szymkowski**, Marek Tabędzki, Łukasz Zienkiewicz
In: *IEEE Access, vol. 8, 2020, pp. 149887-149898, DOI: 10.1109/ACCESS.2020.3015503*

25 26.03.2021 **"Iris-based human identity recognition with machine learning methods and Discrete Fast Fourier Transform"**
Authors: Maciej Szymkowski, Piotr Jasiński, Khalid Saeed
In: *Springer Innovations in Systems and Software Engineering, 2021, DOI: 10.1007/s11334-021-00392-9*

26 10.04.2021 **„Iris-based approach to human identity recognition by Discrete Fast Fourier Transform components"**
Authors: Maciej Szymkowski, Piotr Jasiński, Khalid Saeed
In: *„The 8th International Doctoral Symposium on Applied Computation and Security Systems, ACSS 2021, Calcutta, India, April 09-10, 2021, Proceedings"*

27 24.09.2021 **„Raspberry Pi-based device for finger veins collection and the image processing-based method for minutiae extraction"**
Authors: Maciej Szymkowski
In: *K. Saeed, J. Dvorsky (Eds.) – "Computer Information Systems and Industrial Management. 20th International Conference, CISIM 2021, Ełk, Poland, September 24-26, 2021, Proceedings", pp. 55-65.*

28 30.09.2021 **"A short survey on fully-automated people movement and identity detection algorithms"**
Authors: Maciej Szymkowski, Karol Przybyszewski
In: *Advances in Computer Science Research, vol. 15, 2021, pp. 1-14, DOI: 10.24427/acsr-2021-vol15-0002*

29 25.10.2021 **"PolEval 2021 Task 2: Evaluation of Translation Quality Assessment Metrics"**
Authors: Krzysztof Wołk, **Maciej Szymkowski**
In: *M. Ogrodniczuk, Ł. Kobyliński (Eds.) – „Proceedigns of the PolEval 2021 Workshop", Warszawa, 2021, Instytut Podstaw Informatyki Polskiej Akademii Nauk, pp. 61-65.*

30 23.05.2022 **"Mid-air Haptic Biosignal Transfer"**
Authors: Daria Hemmerling, Maciej Stroiński, Kamil Kwarciak, **Maciej Szymkowski**, William Frier, Orestis Georgiou, Mykola Maksymenko
In: H. Seifi, A. Kappers et. al. (Eds.) – "Haptics: Science, Technology, Applications. 13th International Conference on Human Haptic Sensing and Touch Enabled Computer Applications, EuroHaptics 2022, Hamburg, Germany, May 22 – 25, 2022, Proceedings", Springer Lecture Notes in Computer Science, LNCS 13235, pp. 412 – 415.

31 28.10.2022 **"Haptics-based biometrics identity recognition system"**
Authors: Maciej Szymkowski, Krzysztof Trusiak, Khalid Saeed
In: 4th IEEE Eurasia Conference on IoT, Communication and Engineering, Taipei, Tajwan, 28-30 October 2022, Proceedings

32 07.11.2022 **"Touchless touch with biosignal transfer for online communication"**
Authors: Daria Hemmerling, Maciej Stroiński, Kamil Kwarciak, Krzysztof Trusiak, **Maciej Szymkowski**, W. Celnik, William Frier, Orestis Georgiou, Mykola Maksymenko
In: 24th ACM International Conference on Multimodal Interaction, Bangalor, India, 7-11 November 2022, Proceedings

33 02.2023 **"A combined X-ray fluorescence and infrared microspectroscopy study for new insights into elemental-biomolecular obesity-induced changes in rat brain structures"**
Authors: Magdalena Szczerbowska-Boruchowska, Kaja Piana, Artur Surowka, Mateusz Czyżycki, Paweł Wróbel, **Maciej Szymkowski**, Agata Ziomber-Lisiak
In: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, vol. 293, 2023, DOI: 10.1016/j.saa.2023.122478

34	28.08.2023	**"Convolutional Neural Networks and Vision Transformers in product GS1 GPC brick code recognition"**

34 28.08.2023 **"Convolutional Neural Networks and Vision Transformers in product GS1 GPC brick code recognition"**
Authors: **Maciej Szymkowski,** Maciej Niemir, Beata Mrugalska
In: Computer Graphics International 2023, Shanghai, China, August 28 to September 1, 2023, Springer Lecture Notes in Computer Science, Proceedings

35 22.09.2023 **"Neural Networks and Saliency Maps in Diabetic Retinopathy Diagnosis"**
Authors: **Maciej Szymkowski**
In: K. Saeed, J. Dvorsky, N. Nischiuchi, M. Fukumoto (Eds.) – "Computer Information Systems and Industrial Management applications. 22nd International Conference, CISIM 2023, Tokyo, September 22-24, 2023, Proceedings", LNCS 14164, pp. 298-309

36 27.12.2023 **"A Novel Methodology of Air Pollution Detection Sensor Network Design in Urban Areas on the Example of the City of Łomża"**
Authors: Grzegorz Rubin, Aneta Wiktorzak, Andrzej Sawicki, Tomasz Kuźmierowski, **Maciej Szymkowski**
In: R. Chaki, A. Cortesi, K. Saeed (Eds.) – "Applied Computing for Software and Smart Systems: Proceedings of ACSS 2023", Springer Lecture Notes in Networks and Systems, vol. 781, 2023, pp. 87-103

37 02.2024 **"Convolutional Neural Networks and Vision Transformers in Product GS1 GPC brick code recognition"**
Authors: **Maciej Szymkowski,** Maciej Niemir, Beata Mrugalska, Khalid Saeed
In: B. Sheng, L. Bi, J. Kim, et. al. (Eds.) – "Advances in Computer Graphics. 40th Computer Graphics International Conference, CGI 2023, Shanghai, China, August 28 – September 1, 2023, Proceedings, Part I", Springer Lecture Notes in Computer Science, LNCS 14495

38 03.2024 **"Conceptual Approach for Multimodal Biometrics FPGA-based Security System"**
Authors: **Maciej Szymkowski,** Khalid Saeed
In: A. Salman, A. Tharwat (Eds.) – "Smart Design for Business Innovation. Proceedings of the 3rd American Univeristy in the Emirates International Research Conference, AUEIRC '20, Dubai, UAE 2020", Springer Advances in Science, Technology, and Innovation (ASTI)

39 18.04.2024 **"Automatic detection of contraction direction in cardiomyocytes"**
Autors: **Maciej Szymkowski,** Jakub Gołąb, Kacper Perz, Bartosz Poniewierka
In: 5th Polish Conference on Artificial Intelligence, PP-RAI 2024, 18-20.04.2024, Warsaw, Poland, Proceedings

40 27.09.2024 (Accepted) **"Mathematical modelling for automatic cell contractions detection and their directions in artificially grown human cardiomyocytes"**
Authors: **Maciej Szymkowski,** Jakub Gołąb, Kacper Perz, Bartosz Jura
In: K. Saeed, J. Dvorsky (Eds.) – "Computer Information Systems and Industrial Management applications. 23rd International Conference, CISIM 2024, Białystok, September 27-29, 2024, Proceedings"

41 26.08.2024 (Accepted) **"Calcium activity in a myocardium-on-chip model analysed with computer vision techniques for assessment of tissue contractile properties"**
Authors: Bartosz Jura, **Maciej Szymkowski**, Kacper Perz
In: 32nd International Conference on Information System Development, ISD 2024, 26-28.08.2024, Gdańsk, Poland, Proceedings

SKILLS

Programming Languages:	Python, Java, C#, C++, C, Bash, Assembler, Go, Kotlin, Swift
Desktop applications:	Java Swing, JavaFX, GWT, WPF, Windows Forms
Java technologies:	Java Servlets, Java Server Pages, Java Server Faces, Java Spring, Java Spring Boot
Python frameworks:	Keras, TensorFlow, OpenCV, Pandas, PyTorch, PyMongo
Database languages:	SQL, MySQL, NoSQL (MongoDB)
Web techniques:	ASP .NET, ASP .NET MVC, PHP, HTML, RESTful Web Services, AJAX, JavaScript, Angular JS, Angular 8/10, Vaadin, FastAPI, Django
Mobile technologies:	Android, Universal Windows Platform, iOS
Operating systems:	Microsoft Windows, Linux, Mac OSX
Other:	Linux system administration: Mint, Ubuntu, Fedora; Good knowledge of: XML, XML Schema; Good knowledge of version control systems: SVN, Git; Basic knowledge of ARM programming. Basic knowledge of FPGA technology.
Additional skills:	Category B driving license

LANGUAGES

Polish	National language
English	Advanced (C1) in speech and writing
German	Basics (A2) in speech and writing
Russian	Basics (A2) in speech and writing

INTERESTS

- Biometrics, Image and signal processing and analysis (especially connected with medical images). Artificial Intelligence and Machine Learning (mostly related to medicine or biotechnology).
- Cryptography. IT security. Cloud Computing. Electronics. Mathematics (especially the theory of Banach's spaces and Markov chains).
- Football. Volleyball. Hockey. Basketball. History of the second world war. Classic music and rock. Literature.

I agree that my personal data will be processed to recruit for the position I am applying for.