Radosław Roszczyk

Curriculum Vitae

Faculty of Electrical Engineering
Warsaw University of Technology
(+48) 604-570-290
radoslaw.roszczyk@pw.edu.pl
www.roszczyk.net

A specialist in biomedical image analysis and processing, machine learning, data analysis and distributed systems. He has experience in these areas in the development of new methods and their application in a wide range of scientific and technical fields, including: biomedical engineering, measurement systems, machine vision systems.

Education

2021 : **PhD, Computer Science**, *Warsaw University of Technology*.
Three-dimensional reconstruction of the intestinal glands based on the sequence of microscopic images

2014 : **Master of Engineering, Computer Science**, *Warsaw University of Life Sciences*.
Non-classical methods for credit risk rating using Data Mining techniques

2008 : **Bachelor of Engineering, Life Sciences**, *Warsaw University of Life Sciences*.
Highbush lueberry (*Vaccinium corymbosum* L.) cultivation in Poland

2005 : **Bachelor of Engineering, Information Technology**, *Warsaw University of Technology*.
„System Analityk" as tool for data exploration in customer relationship management systems

Research Experience

Warsaw University of Technology

2024 – now ***DoorCE***, *EU*.
System architect and key programmer. Responsible for the design and core functionality of the system. Programming languages used: C#, JavaScript.

2022 – 2023 ***Mediteller***, *EU*.
Technology consultant for the digitisation of resources representing the cultural heritage of European rural areas

2019 – 2021 ***Baltic Large Scale Computing***, *Interreg*.
Key programmer and system designer. Responsible for the core functionality of the platform. Programming languages used: C#, JavaScript, Python.

2015 – 2016 ***Methods and algorithms of quantitative morphometry in computer analysis of microscopic images of tumours and other lesions in pathomorphology***, *NCN*.
Design of algorithms for tissue segmentation and extraction of anatomical structures. Programming languages used: Matlab

Professional Experience

2024 – . . . **Warsaw University of Technology**, *Vice-Dean for Student Affairs*.
- cooperation with the Faculty Council of the Student Government,
- chairing the Faculty Scholarship Committee and coordinating the university scholarship campaign,
- coordination of student internships and cooperation with companies in this area,
- supervision over student's social and living issues,
- matters related to student's disciplinary responsibility,
- cooperation with secondary schools and the WUT Communication and Promotion Office.

2021 – . . . **Warsaw University of Technology**, *Assistant Professor*.
- research related to the processing of medical images and application of neural networks,
- supervision of student's theses and research projects,
- conducting lectures, projects, workshops and other activities for students,
- conducting own projects and research.

2014 – 2021 **Warsaw University of Technology**, *Scientific Researcher / Lecturer*.
- participation in research projects,
- teaching students,
- teacher training in Python programming (CMI).

2017 – 2019 **Crawford**, *senior developer*.
- design and implementation of tools for new insurance programmes – C#,
- creating applications for internal company needs – C#,
- reporting based on SQL.

2005 – 2015 **JVC Poland / JVC Kenwood Corporation**, *senior developer / IT manager*.
- design and implementation of interface to the ERP system – C#,
- creation of dedicated applications to business needs and end customers (C#, .NET),
- building and maintaining relationships with corporate IT personnel, customers, suppliers and vendors,
- special expertise in ERP System on the corporate level.

1999 – 2019 **Widget**, *senior developer / senior consultant*.
- making additions to ERP system – C#,
- creation of dedicated applications to business needs and end customers – C#,
- implementation of ERP systems (accounting and payroll modules) for customers.

Publications

Journal Articles

2023 Kamil Rybiński, Michał Śmiałek, Agris Sostaks, Krzysztof Marek, **Radosław Roszczyk**, and Marek Wdowiak. Visual low-code language for orchestrating large-scale distributed computing. ***Journal of Grid Computing***, volume 21, pages 1–28, 2023.

2023 Lukasz Kamiński, Maciej Kozłowski, Daniel Sporysz, Katarzyna M Węgrzyn-Wolska, Patryk Zaniewski, and **Radosław Roszczyk**. Comparative review of selected internet communication protocols. ***Foundations of Computing & Decision Sciences***, volume 48, pages 39–56, 2023.

2022 Piotr Zych, **Radosław Roszczyk**, Jan Sroka, and Ken Kawamata. The phenomena of bursts by opening low-voltage relay. ***Energies***, volume 15, 2022.

2021 Tomasz Markiewicz, Małgorzata Lorent, and **Radosław Roszczyk**. Abstract: 3d reconstruction of kidney with tumour based on histopathological macroscopic imaging. ***Virchows Archiv***, volume 479, 2021.

2021 Krzysztof Marek, Michał Śmiałek, Kamil Rybiński, **Radosław Roszczyk**, and Marek Wdowiak. Balticlsc: Low-code software development platform for large scale computations. ***Computing and Informatics***, volume 40, pages 734–753, 2021.

2020 Michał Śmiałek, Kamil Rybiński, **Radosław Roszczyk**, and Krzysztof Marek. Towards a unified requirements model for distributed high performance computing. In Aneta Poniszewska-Marańda, Natalia Kryvinska, Stanisław Jarząbek, and Lech Madeyski, editors, *Data-Centric Business and Applications*, volume 40 of ***Lecture Notes on Data Engineering and Communications Technologies***, pages 1–20. 2020.

2020 **Radosław Roszczyk**, Izabela Antoniuk, and Artur Krupa. Normal patch retinex robust alghoritm for white balancing in digital microscopy. ***Machine Graphics & Vision***, volume 29, 2020.

In Conference Proceedings

2024 Maciej Dragun and **Radosław Roszczyk**. Neural network-based approach to eye disease classification from fundus images. In *Proceedings of the 25th International Conference on Computational Problems of Electrical Engineering (CPEE 2024)*, pages 1–4, 2024.

2024 Justyna Budzyńska, Maria Kujawa, and **Radosław Roszczyk**. Applying artificial intelligence techniques in computed tomography for supporting liver cancer diagnosis. In *2024 Progress in Applied Electrical Engineering (PAEE)*, pages 1–6, 2024.

2023 Aleksander Zamojski, Kacper Jarczak, and **Radosław Roszczyk**. Fetal brain imaging: A composite neural network approach for keyframe detection in ultrasound videos. In *2023 Progress in Applied Electrical Engineering (PAEE)*, 2023.

2023 Ada Szmygin, Marcin Wojtowicz, Żaneta Świderska Chadaj, and **Radosław Roszczyk**. Prediction of athletes' performance results using machine learning algorithms. In *Proceedings of the 24th International Conference on Computational Problems of Electrical Engineering - CPEE 2023*, 2023.

2022 Piotr Zych, Konrad Sobolewski, Jan Sroka, **Radosław Roszczyk**, and Ken Kawamata. Comparative analysis of electric arc by simulation tests and practical measurements of a simple relay. In *2022 23rd International Conference on Computational Problems of Electrical Engineering (CPEE)*, pages 1–4, 2022.

2022 Krzysztof Berski, Krzysztof Wilk, and **Radosław Roszczyk**. Three-dimensional reconstruction of the kidney. In *2022 23rd International Conference on Computational Problems of Electrical Engineering (CPEE)*, pages 1–4, 2022.

2021 **Radosław Roszczyk**, Marek Wdowiak, Michał Śmiałek, Kamil Rybiński, and Krzysztof Marek. Balticlsc: A low-code hpc platform for small and medium research teams. In *IEEE Symposium on Visual Languages and Human Centric Computing (VL/HCC)*, pages 1–4, 2021.

2021 Patryk Nowacki, **Radosław Roszczyk**, and Artur Krupa. Distributed event queue management system. In *2021 22nd International Conference on Computational Problems of Electrical Engineering (CPEE)*, pages 1–4, 2021.

2019 **Radosław Roszczyk**, Tomasz Markiewicz, Robert Koktysz, and Szczepan Cierniak. Active contour method for segmentation of the glands in colon histology images. In Andrzej Napieralski, editor, *Proceedings of 26th International Conference Mixed Design of Integrated Circuits and Systems MIXDES 2019*, pages 1–4. Lodz University of Technology, Department of Microelectronics and Computer Science, 2019.

2015 **Radosław Roszczyk**, Tomasz Markiewicz, Robert Koktysz, and Wojciech Kozłowski. Metody aktywnego konturu w segmentacji i określaniu obwiedni przekrojów gruczołów jelita. In *XIX Krajowa Konferencja Biocybernetyka i Inżynieria Biomedyczna*, page 197. IBIB PAN, 2015.

2012 Tomasz Krupa, **Radosław Roszczyk**, and Cezary Piestrzeniewicz. Czynniki wpływajce na efektywność zapylenia kwiatów borówki wysokiej. In *Czynniki wpływające na plonowanie i jakość owoców roślin sadowniczych*, pages 79–88. Katedra Sadownictwa SGGW, 2012.

2010 Tomasz Krupa and **Radosław Roszczyk**. Znaczenie trzmieli w zapyleniu kwiatów borówki wysokiej. In *Nauka praktyce: XLVI ogólnopolska naukowa konferencja sadownicza*, pages 41–44. Instytut Ogrodnictwa Skierniewice, 2010.

Certificate

2012 Microsoft Certified Technology Specialist

2006 Microsoft Certified Professional

Membership

2016 – ... **Polish Information Processing Society**, *PTI*, #2502.

2016 – ... **Institute of Electrical and Electronics Engineers**, *IEEE*, #93948003.

2015 – ... **International Society for Horticultural Science**, *ISHS*, #39170.

Academic Achievements & Recognitions

2024 **XXV Conference Computational Problems of Electrical Engineering (CPEE2020)**.
10-13th, September 2024, Poland - Member of Program Committee and Organising Committee

2024 **17th Conference on Computer Science and Inteligence Systems**, *(IEEE #54150, ranked B in CORE).*
8-11th, September 2024, Belgrade, Serbia - Program Committee

2022 **Nagroda: Złota Kreda za rok akademicki 2021/2022 w kategorii Najlepszy Prowadzący ćwiczenia, laboratoria, projekty lub seminaria**.
26th, November 2022

2022 **17th Conference on Computer Science and Inteligence Systems**, *(IEEE #54150, ranked B in CORE).*
4-7th, September 2022, Sofia, Bulgaria - Program Committee

2020 **XXI Conference Computational Problems of Electrical Engineering (CPEE2020)**.
16-19th, September 2020, Poland - Member of Organising Committee

Courses and Training

DeepLearning.AI – Coursera

- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
- Sequence Models
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
- AI for Medical Prognosis
- Convolutional Neural Networks in TensorFlow
- Convolutional Neural Networks
- AI For Medical Treatment
- Neural Networks and Deep Learning
- Structuring Machine Learning Projects
- AI for Medical Diagnosis

Johns Hopkins University – Coursera

- The Data Scientist's Toolbox
- Practical Machine Learning
- Exploratory Data Analysis
- Regression Models
- R Programming
- Statistical Inference
- Getting and Cleaning Data
- Developing Data Products

Polish Academy of Sciences

- Mining massive datasets

Microsoft

- Administering Microsoft SQL Server 2012 Databases
- Administering and Automating Microsoft SQL Server 2005
- Creating Reporting Solutions using Microsoft SQL Server 2000
- Reporting Services Designing and Implementing OLAP Solutions Using Microsoft SQL Server 2000
- Designing and Populating a Data Warehouse with Microsoft SQL Server 2000
- Implementing a Data Warehouse with Microsoft SQL Server 2012
- Maintaining a Microsoft SQL Server 2005
- Database Mining massive datasets Programming a Microsoft SQL Server 2000

– Programming with C#

Teaching

2014 – ... **Warsaw University of Technology**.

– Języki i metody programowania
– Podstawy programowania
– Programowanie usług w chmurze
– Testowanie i weryfikacja oprogramowania
– Metodyki wytwarzania oprogramowania
– Sieci komputerowe
– Przetwarzanie obrazów medycznych
– Elektrotechnika i elektronika
– Teoria obwodów
– Podstawy elektromagnetyzmu
– Komputerowa analiza i projektowanie obwodów elektrycznych
– Matematyka - Metody numeryczne w technice