

## ŁUKASZ KĘDZIORA, PHD\*

SOFTWARE ENGINEER

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I am a well-organised, goal-focused software engineer and scientist. I have a rather unusual set of skills; on the one hand, I defended my PhD thesis in 2018 regarding the usefulness of neuroscience and biofeedback in analysing visual messages (mostly art). On the other hand, I have a three-year experience as a full-stack developer specialising in C#, React and Angular. During this period I have been working for both private and public organisations. The most complex app developed mainly by me is a modular web application for foreign language tutors to manage students, classes, payments, as well as to provide some blog post articles, and advertise various freelance services. Currently I'm maintaining an advanced cloud financial application and providing high-quality programming solutions in the SaaS model. Every day I develop applications by implementing tasks with the use of proven and new solutions related to .NET Core, React.js, Azure, Docker, etc. I'm improving my skills (React, C#) and gaining new ones in Docker, cloud solutions and machine learning. I remain an analyst and scientist focused on eye-tracking methodology and usefulness of ML in creating and interpreting art pieces. I am a team player and if I have to, I can be the leader as well, but I really like being a passionate teacher who can describe something really boring in an interesting way. Privately, I'm fond of 3D printing, running, and horse riding.

### WORK EXPERIENCE (RELATED TO IT) :

02.2021 – present

#### **KnowIt Poland/Cybercom Poland**

position: full-stack developer

- front-end developing using ReactJS
- back-end developing using .Net 6
- update and configuration of docker images
- maintenance and update microservices
- using Jenkins and Azure pipelines
- CQRS implementation update
- using Azure DevOps repository

09.2020 – present

#### **Pani Kowalska (a commercial web application)**

position: developer/product owner

project: *Learn App*

- preparing mockups
- work planning
- preparing architecture according to the principles of Clean Architecture
- preparing SQL Server database model
- Entity Framework Core implementation
- ASP.NET Identity implementation
- front-end developing using Angular 11 (main page, mentor panel, student panel)
- creating pipeline on Azure DevOps
- deploying the app on the server  
[link \(early alpha version\)](#)  
[link \(github\)](#)

10.2019–01.2021

#### **Codecool Sp. z o. o.**

position: course attendant

The course covered such topics as: Python basics, .NET Core, ASP.NET, code comprehension, clean code, unit tests, SQL, design patterns, GIT, HTML + CSS, JavaScript, data structures, Angular, multithreading, networking, security.

Selected projects developed during the course:

- GuestBook3 – The project is an ASP.NET Core MVC app. Guest application is one of the must-haves for any beginner programmer. If you are an Admin, you can log in and manage the comments.  
**Technology: ASP.NET, MVC, Razor Pages, Dapper ORM, SQL Server**
- Hydrozagadka2 – doesn't look like an ordinary roguelike because it's based on the SadConsole library in an unusual way. The game has a graphical menu and interface with photos of Warsaw in a decent resolution. During the game you can talk to characters,

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\*\*\* Full version of the resume available at [www.lukaszkedziora.com](http://www.lukaszkedziora.com)

collect items, fight against bots, and finally – save water in Warsaw. [link](#)

**Technology: C#, .NET, SadConsole, MonoGame, SQL Lite, .NET Core**

- Battleship – after starting the game, you can choose who you want to play with – AI or a real person. The AI mode is based on a simple implementation of Monte Carlo method developed by J. Neumann and S. Ulam in 1949. [link](#)

**Technology: C#, .NET**

1.09.2018-30.11.2019

**Emotin Sp. z o. o., Toruń**

position: researcher

- preparing detailed comparisons regarding the construction and usefulness of various eye-tracker types: Tobii Glasses Pro, Pupil Labs Core, Gaze Point GP3, Tobii X2-30
- preparing detailed comparisons regarding the idea and functionality of various software: Haytham, xLabs, GazePoint, MyEye, Ogama, openEyes, PyGaze, OpenGaze, TurkerGaze, GazeParser / Simple Gaze Tracker, ITU Gaze Tracker, The Eye Tribe, Tobii Pro Lab, Pupil Capture/Cloud, Gazepoint Analysis
- preparing detailed comparisons regarding the construction and usefulness of various EEG signal recorder types: Emotiv EPOC, Emotiv Insight, Mind Wave Mobile
- developing methodology for conducting integrated eye-tracking and EEG research
- participating in works on application for remote operating of an eye-tracker connected with an EEG signal recorder
- providing consultations regarding the hardware configuration of the eye-tracker created by Emotin
- organising and conducting three test sessions for the Emotin eye-tracker (involving over 30 participants, 3 different museum institutions)
- creating and publishing a guide on the methodology for conducting eye-tracking research;  
[link](#)

02.2018–12.2018

**Kujawsko-Pomorskie Voivodship Marshall Office, Toruń**

position: scholar

project: *How to look at pictures: eye-tracking in museum*

- conducting eye-tracking research at the District Museum in Toruń
- interpreting the results and developing an interactive exhibition website  
[link](#)

1.09.2015–14.12.2017

**Art & Science research foundation om – organisms and machines in culture**

position: board member, researcher

- recording artists' activity during artistic performances, using biofeedback devices: B-Alert x24 (EEG), Emotiv EPOC (EEG), Tobii Glasses Pro (eye activity), Equival (heart rate, breathing rate, skin temperature, GSR, HRV)
- interpreting the obtained data regarding its usefulness in the process of artistic performance recording (12 artists with different devices configuration)

#### **WORK EXPERIENCE (SELECTED) :**

09.2020 – 02.2022

**District Museum in Toruń**

position: fundraising specialist

- preparing grant applications
- searching for sponsors and patrons
- negotiations with sponsors
- supervision and coordination of project implementation
- creating and implementing fundraising strategies

01.2020 – 01.2021

**Kujawsko-Pomorskie Voivodship Marshall Office, Toruń**

position: researcher

project: *TouchArt - an interactive board game*

- developing the game algorithm
- developing a technique for creating 3d relief models
- printing 10 reliefs using a home 3d printer
- developing the visual identity of the game
- creating a beta version of the game  
[link](#)

01.2020 – 01.2021

**The City Council of Toruń**

position: researcher

project: *#earseeing - an interactive guide for the guests of the District Museum in Toruń*

- recording and editing 15 spots on selected paintings (4K technique)
- preparing 15 audio descriptions of the paintings
- publication of spots and recordings on the project website [link](#)

01.2019-12.2019

**Ministry of Culture and National Heritage of the Republic of Poland**

position: scholar

project: *The art of looking – about the artist’s eyes and emotions*

- conducting workshops for scholars, seniors, pupils and students of all education levels about the usefulness of eye-tracking and biofeedback in creating and analysing works of art; [link](#)

26.07.2018–20.08.2018

**National Institute of Polish Cultural Heritage Abroad “Polonika”, Chicago, USA**

position: scholar

- preparing a photographic inventory of the Polish Mission Museum Collection in Orchard Lake, “Polonika”, Chicago, Orchard Lake, USA

24.02.2016–24.05.2016

**The Warburg Institute, London, UK, The De Brzezie Lanckoronski Foundation**

**The Sainsbury Centre for Visual Arts, University of East Anglia, UK**

position: scholar

project: *The meaning of visual experience in discovering work of art*

- interpreting selected boards of the *Mnemosyne Atlas* with the use of eye-tracking research

#### EDUCATION:

10.2019–01.2021

**Codecool Sp. z o. o.**, Warsaw, full-stack junior developer

**Nicolaus Copernicus University in Toruń**, Faculty of History, doctoral studies on (neuro)art history, PhD degree in historical sciences; PhD thesis with distinction from the exam commission (*summa cum laude*)

2013–2018

Dissertation titled *Visuality of the work of art – about the need to conduct transdisciplinary interpretations and analyses of works of art*; The thesis involved eye-tracking study conducted on 72 participants

2007–2012

**Adam Mickiewicz University in Poznań**, Faculty of History

course: art history

MA thesis titled *Neuroaesthetics as a new method of picture analysis*

2006–2009

**Adam Mickiewicz University in Poznań**, European College in Gniezno

course: European cultural tourism

BA thesis titled *In search of the soul of the city – the Capital City of Poznań city guide*

#### SELECTED PUBLICATIONS (BOOKS):

1. *Sztuka i mózg. W kierunku percepcyjnie zorientowanej historii sztuki*, Wydawnictwo Naukowe UMK, Toruń 2021, 350 pp. [link](#)
2. *Art & eye-tracking. A practical guide for artists, art enthusiasts and researchers*, Toruń 2020. [link](#)
3. *Sztuka i okulografia. Praktyczny przewodnik dla artystów, entuzjastów i badaczy sztuki*, Toruń 2020, 80 pp.
4. *Wizualność dzieła sztuki. Ocena potencjału neuroestetyki w badaniach historyczno-artystycznych*, Wydawnictwo Naukowe UMK, Toruń 2016, 196 pp. [link](#)

#### Languages:

– English (advanced level)

– Polish (native or bilingual proficiency)

#### Knowledge and experience in:

– .NET Core, C#, ASP.NET

– Angular 11, Razor Pages

- MS SQL Server, PostgreSQL
- Basic Python
- GIT, Azure DevOps
- Linux OS (Ubuntu, Gentoo, etc.)
- Scrum/ Egitim
- WEB API
- HTML5, CSS3

**Skills:**

Level 5 - Expert

Eye-tracking

Level 4 - Advanced

Biofeedback, C#, Clean Architecture, Experimental methodologies

Level 3 - High Competence

.NET Core, 3D Design Fusion 360, 3D print, AngularJS, Angular-ui, ASP.NET Identity, ASP.NET MVC, ASP.NET Web API, Bootstrap 5, CSS, CSS Flexbox, Dapper, Entity Framework, GIMP, HTML, Jenkins CI, Linux, MS SQL Server, Neurofeedback, Photoshop, React.js, REST, SQL Management Studio, Swagger, Test of Usability and user friendliness, UI/ UX Design, Unit tests, UNIX Shell Script (Bash), Usability Methodology, Wordpress, Workshops

Level 2 - Intermediate

Angular, Angular Material, Automapper, DevOps Management, Docker, EEG, Git, JavaScript, Microsoft Azure Cloud Services, Monogame, MySQL, Oracle VirtualBox, Python, Razor Pages

Level 1 - Novice

ML.NET, MongoDB development and administration

**Licences:**

- driving licence (cat. B)
- motorboat helmsman certificate of competency

I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the European Parliament's and Council of the European Union Regulation on the Protection of Natural Persons as of 27 April 2016, with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (Data Protection Directive)