



Marcin Sztukowski

Projects

Jagiellonian University GMUM and Wawel Museum (Oct 2025 - Feb 2026)

2D→3D Reconstruction – VistaDream + Depth Anything

- Integrated Depth Anything v2 into VistaDream via custom adapter.
- Modified depth normalization and camera logic for stable 3D projection from paintings.
- Generated 3D Gaussian Splatting (.ply) point clouds from single 2D image.

ML Digital Painting Restoration – Diffusion + LoRA + Flux

- Built diffusion-based inpainting pipeline (FLUX.1-dev) for restoration of damaged artworks.
- Trained and optimized LoRA adapters for painter-specific style reconstruction.
- Improved reconstruction stability via mask refinement and controlled inference tuning.

FoxyGodot – 2D Platformer Game

- Developed 2D platformer in Godot (C#) with modular, object-oriented architecture.
- Implemented multiple design patterns: Strategy (enemy movement), State (player FSM), Factory (object creation), Observer/Event Bus (SignalManager), Singleton, Template Method, Iterator etc.
- Implemented centralized event system for player damage, score updates and game state transitions.
- Built extensible enemy framework with interchangeable movement strategies (walking, jumping, flying).

ECGApp – ECG Monitoring and ML Classification System

(iOS (SwiftUI) + Embedded BLE + Deep Learning)

Mobile Application (iOS)

- Developed iOS application from scratch using SwiftUI for real-time ECG visualization and recording
- Implemented BLE communication layer (CoreBluetooth) for streaming ECG data from external sensors
- Built configurable signal processing pipeline (sampling rate, scaling, normalization)
- Implemented local storage in .json and WFDB-compatible formats
- Deployed all ML models for on-device inference (CoreML) with full data privacy

Embedded & Hardware Integration

- Designed Arduino-based ECG acquisition system
- Implemented BLE data transmission to mobile device
- Built complete data flow: electrodes → microcontroller → Bluetooth → iOS app

Machine Learning and Signal Processing

- Trained three independent PyTorch models:
 - Rhythm classification
 - Beat-type classification
 - Waveform segmentation
- Performed preprocessing: resampling, wavelet denoising, normalization
- Converted models for mobile deployment

Personal details

Marcin Sztukowski

Phone number
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Website
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Skills

Arduino
Bash
C
C#
C++
DataScience
Haskell
Java
Machine Learning
Networking
Python
Swift
SQL
Unix
Cryptography

Languages

English C1
Polish Native



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Work experience

Seasonal Tax Office Assistant (Summer Intern)

Jul 2016 - Sep 2020

Jand J Financial Associates LLC, New Britain, CT, USA

Summer employment each year in accounting and tax support roles. Tasks included invoice issuance, document proofreading, sales and property tax filing, and IT/technical support.

Warehouse Associate

Jun 2021 - Sep 2022

Tania Ksiazka Sp. z o.o., Białystok

Fulfillment of online orders: picking, packing, inventory control. (two summer breaks)

Tax Office Assistant

Jun 2022 - Jan 2023

Jand J Financial Associates LLC, New Britain, Connecticut, USA

Full-time assistant during tax season. Filing standard income tax returns and managing IRS and insurance audits.

Network Engineer

Dec 2024 - Jan 2025

122 Main St, New Britain, CT, USA

Complete overhaul of the building's IT and network infrastructure. Installation and configuration of routers, switches, patch panels, and IP surveillance cameras with new cabling. Configuration of VOIP server and handsets, VLAN segmentation, traffic routing, and allocation of distinct public IP addresses for each office.

IT Support / Lead Server Administrator

Jan 2022 - Present

Jand J Financial Associates LLC, New Britain, CT, USA

Providing remote and telephone-based technical assistance to staff at a tax office. Maintaining seamless operation of all computing systems, VoIP phones, printers, email services, and the primary data server. Enhancing workflow efficiency through hardware/software upgrades and system optimizations for continuous, reliable operations.

Math Tutor

Jan 2022 - Present

Tutored high school students in mathematics, focusing on core concepts and exam preparation.

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Skills

Arduino
Bash
C
C#
C++
Data Science
Haskell
Java
Machine Learning
Networking
Python
Swift
SQL
Unix
Cryptography

Languages

English C1
Polish Native

Education

High school

Sep 2016 - May 2019

VILO Białystok,

Economy - Bachelor's degree

Oct 2019 - Sep 2021

University of Warsaw, Warsaw

Computer Science - Bachelor's degree

Oct 2021 - Jul 2025

Jagiellonian University, Kraków

Computer Science - Masters's degree

Jul 2025 - Present

Jagiellonian University, Kraków