

GYÖRGY SZELJAK

LEAD ENGINEER, MOTION PICTURE EXPERT



+36 70 336 77 32



gyorgy.szeljak@gmail.com



Budapest, Hungary



www.polarbear.hu



I'm a lead software engineer with a great experience in motion picture arts and mechatronics projects. Utilizing state-of-the-art robotics, automation solutions, embedded technologies, sensors, programming languages and software frameworks I am focusing on data acquisition, processing and routing for realtime controlling and creating intuitive user interface solutions.

Birth date

17th December 1987

Spoken Languages

Hungarian, English

Category „B” EU Drivers Licence

EDUCATION

TLC

English Faculty
Westwood, Los Angeles, USA

RENNERT

English Faculty
Manhattan, New York, USA

BUDAPEST TECH POLYTECHNICAL INSTITUTION

John von Neumann Faculty of Infomatics
Budapest, Hungary

BUDAPES COLLAGE OF COMMUNICATION AND BUSINESS

TV Programme Producing
Budapest, Hungary

PUBLICATIONS

ROCKETLAB DEVLOG

<http://rocketlab.eu/devlog>

CAMERA CAR CRAZE

<youtube.com/watch?v=lyuKdDzEIWs>

OMG Visuals Identity

<youtube.com/watch?v=mDkQ0zttiyk>

ROBOT TECHNOLOGY IN FILMMAKING

„MédiaTechnika” Magazine
Spring 2014

PROFESSIONAL EXPERIENCE

CO-FOUNDER, CHIEF TECHNOLOGY OFFICER (CTO), ROCKET LAB KFT

2016 – Present

➔ Lead Engineer, Senior Software Developer: Rocket Cinema Robot

Electrical infrastructure and architecture Design, Sensor Communication, PLC (TwinCAT) Programming, Discrete Safety Sub-System, Forward & Inverse Kinematics, RealTime / Online Trajectory Generating, Motion Controlling, EtherCAT, Safety Over EtherCAT Communication, Direct Servo Control, Hard / Soft RealTime Processing and Communication, Spatial Computing, Cinema4D Python Plugin, Autodesk Maya Plugin, Unreal Render Engine integration

<http://www.rocketcinemarobot.com/>

➔ Lead Engineer, Senior Software Developer: Ignition Software, Ignition SDK and Embedded Peripherals

C, C++, QML, Qt Framework, Platform Independency (Win, MacOSX, Linux, iOS, Android)

<http://www.rocketlab.eu/ignition>

➔ Lead Programmer, Senior Software Developer: Fuel Transport Communication Protocol

C, C++, Ethernet Sockets

➔ Lead Programmer, Web Based Robotic Arm Demo Web Application

THREE.js, JavaScript, HTML5

<http://www.rocketlab.eu/rocketcinemarobot#interactive-demo>

➔ Creative Director of Content

Marketing Material, Website Content, Social Media, Copywriting, Video Content Creation, Product Presentations, Workshops

➔ Team Lead, Camera Motion and Visuals SFX Programmer

Rapid Prototyping involving robotics, electronics, pneumatics, lighting control, sensors

Feature Films: Terminator - The Dark Fate, Birds of Paradise, The Witcher TV Series, Chain

TV Commercials: McDonald's, Taco Bell, Microsoft Xbox, MOL Group, Spar, K&H, HELL

Energy, UNIX, TV2, LifeTilt, Sport Szelet, Hikoki, Mindig TV, AZ Mesiterteile

HEAD OF 3D PREVISUALIZATION TECHNOLOGY, KARATE COMBAT

2019 – Present

➔ 3D Camera tracking AR / VR infrastructure engineer, supervisor

Multiple camera synchronization, Real-time chroma keying, Visual SLAM based camera

tracking, Unreal Engine based 3D background / foreground rendering

<http://www.karatecombat.com/>

CO-FOUNDER, CHIEF TECHNOLOGY OFFICER (CTO), OMG VISUALS KFT

2011 – Present

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EXPERTISE

Rapid Prototyping

Team Leading

Programming

Communication Protocols

Infrastructure Design

Creative Video Content Creation

Copywriting

Cost estimation

TECHNOLOGIES

C, C++, Python, JavaScript, PHP, Java

Qt Framework, QML

Git, SVN

MySQL, JSON

Ethernet, EtherCAT, CanOpen, Bluetooth, BLE, RS232, RS485

Visual SLAM, OpenCV

CAD/CAM Design, 3D Printing

SolidWorks, Fusion, Inventor

DaVinci Resolve, Adobe Premiere, Adobe After Effects

Cinema 4D, Maya, Blender, 3D Studio Max

PlatformIO, Arduino, Mbed

➔ Lead Engineer: OMG / Totalcar Camera Car

Drive Train - SolidWorks CAD/CAM Design, CNC Machine Programmer / Operator, DC Motor Control, STM32 Embedded Programming, Electronics Design, CAN-BUS Network, Inertial Measurement Unit (IMU), Magnetic Rotary Sensors

<https://www.youtube.com/watch?v=lyuKdZElWw>

➔ Video Post-Production Workflow Engineer, IT Infrastructure, Cloud Based Video Post-Production Redundant video file server design with automated video proxy convert mechanism, Redundant DaVinci Resolve PostgreSQL server.

➔ Lead of OMG Machinery motion control software development

C++ Programming, KUKA Robot Language (KRL), DeviceNET protocol implementation, NXP, STM32 Embedded Programming, Stepper/DC/BLDC Motor Control, 3D Studio Max Plugin, Spatial Library Development

<https://www.omgvisuals.com/fejlesztesek>

➔ Won Government Tender VEKOP-2.1.7-15 - Writer / Project manager / Lead engineer

Globally unique, complex but user friendly, cost effectively deployable camera, light and model mover system built from state-of-the-art industrial components.

HEAD TECHNICIAN, LEAD ENGINEER, SPECIAL GRIP HUNGARY KFT.

2016 – Present

➔ Lead Engineer of SGH 3D Cablecam V2 (4 Axis)

Electrical infrastructure and architecture design, Sensor Communication, PLC (TwinCAT) Programming, Discrete Safety Sub-System, Spatial Control Mathematics, RealTime / Online Trajectory Generating, Motion Controlling, EtherCAT, Safety Over EtherCAT Communication, Servo PID Tuning, Hard / Soft RealTime Processing and Communication, Blender Frontend Plugin, Ignition Plugin, VizRT Render Engine Integration

➔ Lead Engineer of Line Cablecam (1 Axis) (<https://specialgrip.com/product/93>)

Electrical infrastructure and architecture design, 2.4GHz Communication, Embedded Motion Controller, Touchscreen interface

Project Highlights: Berlin Station TV Series, Hanna TV Series, San Remo Giovanni TV Show, Nyerő Páros TV Show

➔ Stabilized Remote Head Expert

Projects: Strike Back TV Series, Berlin Station TV Series, Mars TV Series

➔ Russian Arm Car Crane Technician, Operator (<https://specialgrip.com/product/71>)

Project Highlights: The Spy Who Dumped Me Feature Film, Homeland TV Series, Treadstone TV Series, KIA Stonic TV Commercial, Vodafone TV Commercial, Totalcar TV Series, AIMotive Commercial

SENIOR PROGRAMMER, VIDEO CONTENT CREATOR, INDEX.HU

2008 – 2011

➔ Lead of Infrastructure for the first Hungarian web based news broadcasting

https://marsforgatni.blog.hu/2008/11/05/amerika_04

➔ IndaVideo.hu Frontend Developer

PHP, MySQL, JavaScript, HTML5

FOUNDER, CEO, POLAR BEAR STUDIOWORKS

2006 – 2011

➔ END-TO-END PR VIDEO, TV COMMERCIAL, BROADCAST CONTENT PRODUCING SERVICES

➔ END-TO-END WEB APPLICATION DEVELOPMENT SERVICES