Kühn András Gábor

Graphics-oriented CV

See the rest on my GitHub page:

http://github.com/kuhnandrasgabor/cv

Personal info

- **Location:** Szeged, Hungary
- **Email:** kuhnandrasgabor@gmail.com
- **Social:** LinkedIn
- **Visuals:** Gallery

Objectives & Aspirations

- Long-term career in a field aligned with my passions
- Clear opportunities for growth and advancement
- Work-life balance with remote work or flexible hours
- Competitive compensation
- Involvement in meaningful and engaging projects
- Opportunities for continuous learning and professional development
- A balance of autonomy and collaborative teamwork

Professional experience

I'm a professional with over a decade of diverse experience spanning various fields, ranging from **machine learning** and **web development** through **3D visualizations** to professional **photography**.

I have experience in leadership roles in **smaller teams**, including CEO of a tech startup, where I led a complex multiplayer **online game development** project, and later as CTO of a startup doing **AI powered industrial data management** and SaaS solutions for aviation MROs and other heavy industries.

I have some experience in business negotiation and project management, but am my *very best* at **creative design and problem-solving**, where I can make the most of my wide spanning technical background I gathered throughout my work and hobbies. I am a very firm believer in the pareto principle, and try to equip myself with knowledge among various fields, while relying on specialits in matters where I am not an expert of.

Thanks to my english skills, I excel in multicultural environments.

Committed to **continuous learning and improvement**, with an eye for detail and a passion for technology and innovation, I try to use technology to improve all aspects of my personal and professional life, such as using AI tools when justified/appropriate.

2020 – Present: Data Science, Machine Learning, Full-Stack Developer & Acting CTO at Pzartech Ltd.

Initially a freelance developer, ended up as acting CTO, in charge of all development and architecture decisions.

Web based data management software

I was in charge of developing a web-based data management system, focusing on MRO and industrial clients, enhanced by Ai search tools.

Machine learning and training

- ML dataset generation
  - Raw video processing, segmentation, enhancement, evaluation for semi-synth data
  - Realistic generation of labeled synthetic images
  - Dataset management and tooling

- ML Training
  - Image quality assessment network for training data evaluation
  - Bounding box generation network for training data evaluation
  - Image classifier network for industrial part recognition
  - Optical character recognition system

- Integrating with existing SaaS architecture in Azure's cloud
- Performance charting and analysis

2011 – Present: Freelance Professional (Photography, 3D Graphics, Webdesign, Architectural Visualization)

I have over the years gathered experience across various industries from **photography**, and **programming** to real-estate **renovation**.

On the computer side of things I was part of a team tasked with building a multilanguage **checklist app for iOs**, and I had worked on a **Magento based online** furniture **store** mostly written in PHP.

On the visuals front, I worked on interactive, real-time **3D architectural visualization** projects using **Unreal Engine 4 and Blender** for both personal and client projects.

I did **3D modeling and animation** work in Blender, and **branding, advertising, logo and web design** work in Adobe Creative Suite.

For personal projects and changing things up, I did some remodeling and renovation work, and also worked for quite some time as a freelance **photographer** just for fun and to keep my skills sharp.

3D modelling and visual effects

I had the opportunity to work on some 3D visualizations for interactive training material related to natural disasters. I had to come up with ways to illustrate, then model and render various **natural disasters**, such as floods, earthquakes, wildfires and wildfires. To do this, I used **Blender's physics simulation** for **fluids**, and **smoke**, along with **rigidbody collisions**, and destruction. In order to meet tight deadlines, I had the **rendering** running on seven computers in the office **simultaneously** after baking the sims.

- visualizing and rendering various natural disasters
- distributed rendering locally on several machines
- physics simulation including fluids, smoke, collisions, and destruction

Go to 3D gallery [↓]

Interactive Architectural Visualization

A contractor friend of mine approached me with an offer to help him with a family house he was building soon. We decided to see if prototyping a realistic **interactive 3D walk around showcase** for the project was worth it.

I was provided some CAD drawings and a floorplan on which I modeled the house in **Blender**, designed some **realistic PBR materials and textures**, and set up a scene in Unreal Engine 4. The result was a realistic interactive 3D walk around showcase of the house, that you can still try out here or just watch another one of these projects on youtube. I even built custom model generators for kitchen cabinets and a solar gain based 3D plant-growth model in **Houdini**, just for giggles.

- Real-time interactive demo software using Unreal Engine 4
- Hybrid lighting, using both real-time reflections and switchable dynamic lights, with pre-baked lightmaps
- Realistic PBR materials and textures
- Custom model generators for kitchen cabinets and a sunlight based 3D plant-growth model in Houdini

Go to interactive gallery [↓]

Realistic Architectural Visualization

I had been designing and rendering my house for some time when an opportunity to do do some freelance work came up. I had a 1-day deadline to create 3D renderings to apply to a government grant for renovating a condo's yard. I took some photos of the sites, measured them and sketched it out in **Blender**, quickly made some materials and textures, and rendered it out in **Cycles**. The result was a realistic rendering of the yard. The grant was won, and the yard was renovated for two different buildings.

- Realistic rendering
- Solar gain analysis
- Quick and dirty mockup from on-site photos and measurements

Go to realistic gallery [↓]

2014. – 2020. Stoneglass Labs KFT., Szeged (CEO)

Headed a software development team in a small company developing an ambitious online multiplayer game.

Stars End (MMORPG game software project)

Led development and design of an ambitious **multiplayer online game** involving large-scale, space-themed gameplay. I handled virtually all aspects of **game logic, engine customization (Unity 3D and Unreal Engine 4) from AI logic to shader programming**. Built over 300 custom **icons, volumetric effects, and modular 3D spaceship models, UI elements** and a myriad of tools. The project required self-learning of various skills from writing the background lore to refining of business models for monetization, a creation pipeline for assets, including all **graphics both 2D and 3D, procedural geometry generation logic, VFX and sound design**.

- Creative lead design
- Software design and development
  - Engine customization
    - Unity 3D
    - Unreal Engine 4

  - Architecture
  - Network communication
  - Data security
  - Scalability

- Gamedesign
  - Graphics design
    - Brand
    - 2D, 3D assets
    - UI/UX

- VFX, shaders
- AI, FSM

- Sound and music
- Level design
- Story, missions and background info

- Development of content generation tools and additional software

Go to starsend gallery [↓]

Relevant Projects

Homing Szeged - Real Estate Agency (2017 – Present)

- Developed the brand identity and all marketing materials for a family-owned real estate business.
- Created a logo reflecting the city of Szeged and its landmarks while incorporating visual elements like keys and target reticles.
- Designed a user-friendly website with a dark theme, matching modern UI trends, and integrated a QR code system into business cards for ease of contact.
- Managed various print materials, forms, and signage to align with the brand's design language.

Star's End - MMORPG (2013 – 2020)

- Led development and design of an ambitious multiplayer online game involving large-scale, space-themed, team-based gameplay.
- Handled all aspects of game logic, engine customization (Unity 3D and Unreal Engine 4), AI design, and shader programming.
- Built over 300 custom icons, volumetric effects, and modular 3D spaceship models.
- Project required self-learning of game mechanics, business modeling, and pipeline creation, including procedural geometry generation and VFX design.

Real Time ArchViz with Unreal Engine 4 (2020)

- Developed a real-time 3D architectural visualization for a contractor using Unreal Engine 4.
- Modeled in Sketchup, textured in Blender and Substance Painter, baked lightmaps, and implemented navigation via Blueprints.
- Created a realistic, interactive demo of the house with high hardware requirements, demonstrating photorealism within engine constraints.
- Delivered a downloadable, high-quality, executable version with real-time lighting and walk-through controls (WASD + mouse).+
- Download the demo: Download Executable

Waterfront House - Personal Project (2019)

- Designed and modeled a concept house in Sketchup, later refined and rendered photorealistically in Blender.
- Applied procedural materials and HDRI lighting for realistic exterior and interior scenes.
- Integrated custom foliage and architectural assets to produce a detailed, lifelike render of the house concept.

Studies

- **Business Coaching** *(2013 – 2014)* Basic business workflow and management training through Támop 2.3.6 grant.
- **Tripont Light Academy 1-2-3** *(2011 – 2013)* Comprehensive training in lighting techniques, various photography disciplines, and project management.
- **SZTE JGYPK, Web Programmer Certificate** *(2010 – 2011, Incomplete)* Gained foundational skills in web development, including HTML, Java, SQL, and graphic design. Lost interest and shifted to photography and entrepreneurship.
- **SZTE TTIK, Computer Engineering BSc.** *(2008 – 2010, Incomplete)* Attended courses in programming (C, Assembly), computer architecture, discrete mathematics, and algorithms. Did not complete the degree, switched career focus.

Skills and competencies

Technical Skills

Programming Languages

- **Experienced:** C#, Python
- **Proficient:** C++, HTML, CSS, SQL, PHP
- **Familiar:** Java, JavaScript, TypeScript, C, Google Script, assembly

Frameworks and Technologies

- **Web Development Frameworks:**
  - **Experienced:** .NET Core, Blazor, Razor, MAUI, MudBlazor
  - **Proficient:** Angular
  - **Familiar:** Flask

- **Machine Learning Frameworks and Tools:**
  - **Familiar:** FastAI, PyTorch, TensorFlow, Scikit, Jupyter Notebooks, Paperspace Gradient

- **DevOps and Containerization:**
  - **Experienced:** Azure DevOps
  - **Proficient:** CI/CD pipeline implementation
  - **Familiar:** Docker, Docker Compose

- **Data Analysis and Visualization:**
  - **Familiar:** Pandas, NumPy, Matplotlib, Seaborn

Databases and Data Management

- **Proficient:** MongoDB, SQL databases (e.g., MySQL, SQL Server)
- **Familiar:** ElasticSearch

Cloud Services and DevOps

- **Experienced:** Azure DevOps, Portal, Storage, App services and VMs
- **Proficient:** Azure Resource Management, CI/CD pipeline implementation
- **Familiar:** Docker, Docker Compose, Azure Media Services

Software and Tools

- **Version Control:**
  - **Experienced:** with Git (Azure DevOps, GitHub)
  - **Familiar:** with SVN

- **3D Graphics and Modeling:**
  - **Experienced:** Blender 3D, Unreal Engine 4, Unity 3D
  - **Proficient:** Substance Painter, Substance Designer, SketchUp, V*Ray
  - **Familiar:** Houdini, SolidWorks CAD, ArchiCAD, CATIA, Fusion 360

- **Adobe Creative Suite:**
  - Experienced with Adobe Photoshop and Adobe Lightroom

Creative Design and Game Development

- 2D/3D asset creation, vector graphics, modeling, texturing, lighting, and rendering
- UI/UX design for web and applications
- Visual storytelling and game design
- VFX, shaders, and procedural/parametric modeling
- Experience with game development and engine customization in Unity 3D and Unreal Engine 4
- Animation and physics simulation

Professional Skills:

- **Project Management:** Experience managing projects from conception to completion, including software development, marketing campaigns, and creative projects. Familiar with Agile methodologies and Azure DevOps for CI/CD pipeline management.
- **Business and Negotiation:** Experience in business negotiation, client management, and corporate administration. Skilled in developing and executing strategic business plans.
- **Creative and Design Skills:** Strong background in creative design, including 2D/3D asset creation, UI/UX design, and visual storytelling for gaming and simulation. Experienced in VFX, shaders, and procedural/parametric modeling.

Soft Skills:

- **Leadership:** Experience in managing smaller cross-functional teams in mostly startup environments. Capable of mediating conflicts and fostering a collaborative workplace.
- **Communication:** Fluent in English (C2) and beginner in German (A1). Skilled in clear and effective communication with both technical and non-technical stakeholders.
- **Problem-Solving and Adaptability:** Strong analytical skills with a demonstrated ability to solve complex problems and adapt to new challenges. Comfortable learning new technologies and tools independently.

Interests

Creation

Creating and altering things has grown to be a fundamental part of my life. Whether it's a piece of software, a 3D model, furniture, or a photo, I have enjoyed the process of creation and the satisfaction of seeing the results of my work since early childhood.

Creativity and Design

A strong passion for creativity, from legos to VR to simulation and design, this passion fuels my interest in software development and design.

Mechanics and Electronics

What started out as hobby R/C models has kept up with me throughout my life, as I have built (and repaired) various electronic devices. This hands-on experience of taking things apart, understanding how they work, and putting them back together enhances my understanding of hardware-software integration.

Technology and Futurism

I am deeply interested in emerging technologies and their potential impacts on society, such as AI, quantum computing, and space exploration. This forward-thinking mindset gives me perspective when I approach my software development and data science endeavours.

Nature, Elements, Exploration

Since as long as I can remember, I have always enjoyed water and am a certified scuba diver. For most of my adult life, I have been a rock climber and outdoor enthusiast. Lately I picked up paragliding, adding an additional element to my interests. In my life, I seem to gravitate towards activities that reward me with a sense of exploration and connection to the natural world, while demanding personal responsibility and self-reliance.