






Péter Ferenc Gyarmati

Human-AI Interaction Research@MBZUAI | Full-Stack Developer

📍 Abu Dhabi, UAE | Vienna, Austria @ hello@peter.gy 🔗 https://peter.gy

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 peter-gy

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Summary

I take software from concept to deployment, grounded in a Computer Science background and a focus on high-quality engineering. My work connects industry and academia, where I build practical AI/ML solutions and contribute to research in agentic AI and data analysis.

Experience

Mohamed bin Zayed University of Artificial Intelligence

September 2025 - December 2025

Invited Visitor at Human-Computer Interaction Group

Abu Dhabi, United Arab Emirates

🔗 <https://mbzuai.ac.ae>

Developing a hybrid AI framework that provides actionable feedback on data visualizations. By combining deterministic, rule-based logic with LLM-powered agents, the system offers principled context- and audience-aware suggestions to help users create more effective and trustworthy visualizations through a human-AI collaborative workflow.

Ripassa

August 2021

Senior Full-Stack Developer | Part-time

Remote

🔗 <https://www.linkedin.com/company/ripassa/>

Developing AI features for content planning insights using semantic search (Python/LanceDB/Ollama), integrated within a full-stack (Next.js/TypeScript) environment. Managing databases & CI/CD pipelines.

STOIC

July 2024 - February 2025

VP of Engineering

Palo Alto, California, United States - Remote

🔗 <https://www.linkedin.com/company/sutoiku/>

Built predictive models using neural networks and time-series methods like matrix profile. Designed and implemented scalable Excel-Python integration for cloud and local execution. Cut RAG pipeline latency from minutes to seconds via serverless optimization. Led backend migration from Node.js to Python to boost data capabilities.

STOIC

July 2023 - June 2024

Lead Developer

Palo Alto, California, United States - Remote

🔗 <https://www.linkedin.com/company/sutoiku/>

In a fast-paced startup, developed full-stack integrations for a DuckDB-powered BI platform on AWS, focusing on query optimization, data visualization enhancements and generative AI integrations. Developed practical solutions leveraging OpenAI, Gemini, Anthropic, and Llama models.

LEAN-FORGE

June 2022 - July 2023

Senior Full-stack Developer

Vienna

🔗 <https://www.linkedin.com/company/lean-forge/>

Developed a hybrid B2B (Next.js/Google Cloud) / B2C (Flutter) application and architected/implemented Python & NestJS backends on Azure for automotive leader Magna International.

Education

University of Vienna	October 2023 - April 2026
Data Science	Master of Science - MS
University of Vienna	March 2023 - October 2023
Computer Science	Master of Science - MS
University of Vienna	October 2019 - December 2022
Computer Science	Bachelor of Science - BS
Graduated with distinction. Received “Best Bachelor Graduate” award.	
International Baccalaureate	September 2017- May 2019
Mathematics and Computer Science	
42/45	

Awards

Best of the Best - Best Bachelor Graduate	December 2024
Faculty of Computer Science at the University of Vienna	
In the category Best Bachelor Graduate Péter Ferenc Gyarmati ranks among the Top 3 in an overall ranking of the Faculty of Computer Science at the University of Vienna.	
VIS 2023 - Best Short Paper Honorable Mention	October 2023
IEEE Computer Society	
Best Short Paper Honorable Mention Award for "Draco 2: An Extensible Platform to Model Visualization Design".	
Tehetségútlevél (Talent Passport)	May 2019
The Hungarian Association for Innovation	
Recognized for outstanding performance in the <u>Youth Science and Innovation Talent Research Competition</u> .	

Projects

VISxGenAI 2025: Composable Agents for Visual Reporting	August 2025 - Present
Autonomous agentic system for visual analytics in the generative AI era	
https://peter.gy/projects/agentic-visual-reporting	
A multi-agent architecture with 11 specialized agents orchestrated in a pipeline for automated visual data reporting. This project represents a novel approach to AI-powered data analysis through a composable agentic system that addresses fundamental challenges in traditional AI analytics. Invited for presentation to <u>IEEE VIS 25</u> .	
Python, DSPy, DuckDB, Langfuse, Marimo, TypeScript, Vue, OpenAI, Google Gemini, LLM, Agentic AI, AWS S3, Cloudflare, Node.js	
PLUTO	Dec 2022 - Jun 2025
Public Value Assessment Tool	
https://peter.gy/projects/pluto-public-value-assessment-tool	
Addressing the risks of data misuse, PLUTO assesses the public value of data applications through risk/benefit analysis. Led software development, translating pioneering data governance concepts from <u>Lancet Digital Health P ublication</u> into a working full-stack tool.	
TypeScript, Next.js, Node.js, React, Python, PostgreSQL, Docker, Strapi CMS, Umami Analytics, Data Ethics	
Flutter & Firestore Architecture	Jul 2021 - Aug 2021
Reference App	
https://github.com/lean-forge/flutter-firestore-dao	
Developed a reference Flutter app showcasing clean architecture for Firestore data persistence. Implemented caching, offline support, and synchronization, emphasizing testability and maintainability for production-ready Firebase apps.	
Mobile Application Development, Flutter, Google Cloud Platform (GCP), Firebase, Cloud Firestore, Layered Architecture	

Publications

Draco 2: An Extensible Platform to Model Visualization Design

October 2023

Proceedings of the 2023 IEEE Conference on Visualizations (VIS)

<https://peter.gy/projects/draco2>

Draco introduced a constraint-based framework to model visualization design in an extensible and testable form. It provides a way to abstract design guidelines from theoretical and empirical studies and applies the knowledge in automated design tools. However, Draco is challenging to use because there is limited tooling and documentation. In response, we present Draco 2, the successor with (1) a more flexible visualization specification format, (2) a comprehensive test suite and documentation, and (3) flexible and convenient APIs. We designed Draco 2 to be more extensible and easier to integrate into visualization systems. We demonstrate these advantages and believe that they make Draco 2 a platform for future research.

Do Vision-Language Models See Visualizations Like Humans? Alignment in Chart

November 2025

Categorization

Proceedings of the 2025 IEEE Conference on Visualizations (VIS) | Poster Track

<https://peter.gy/projects/human-vs-ai-perceptual-alignment-study>

Vision-language models (VLMs) hold promise for enhancing visualization tools, but effective human-AI collaboration hinges on a shared perceptual understanding of visual content. Prior studies assessed VLM visualization literacy through interpretive tasks, revealing an over-reliance on textual cues rather than genuine visual analysis. Our study investigates a more foundational skill underpinning such literacy: the ability of VLMs to recognize a chart's core visual properties as humans do. We task 13 diverse VLMs with classifying scientific visualizations based solely on visual stimuli, according to three criteria: purpose (e.g., schematic, GUI, visualization), encoding (e.g., bar, point, node-link), and dimensionality (e.g., 2D, 3D). Using expert labels from the human-centric VisType typology as ground truth, we find that VLMs often identify purpose and dimensionality accurately but struggle with specific encoding types. Our preliminary results show that larger models do not always equate to superior performance and highlight the need for careful integration of VLMs in visualization tasks, with human supervision to ensure reliable outcomes.

Languages

English

Professional Working



German

Professional Working



Hungarian

Native Speaker



Spanish

Limited Working



Russian

Elementary



References

Ismael Chang Ghalimi

CEO @ STOIC. Computer scientist, builder, entrepreneur.

<https://www.linkedin.com/in/ghalimi>

Péter is, without question, the most talented software engineer I've had the privilege of working with throughout my career. His exceptional technical skills are matched equally by his integrity, honesty, and unwavering professionalism. Péter is a rare individual — if you are fortunate enough to add him to your team, you owe it to him to give him the most challenging assignments that will make him grow toward his full potential. Such a blessing comes with high obligations.

Olivier Gaucher

VP of Product @ STOIC. Rubik's cube world champion.

<https://www.linkedin.com/in/ogaucher>

It was a rare pleasure to have Peter in our team. As Head of Engineering, he had a tremendous impact — most notably leading our successful transition to Python for our backend systems. This was a major technical shift, and thanks to Peter's leadership, expertise, and commitment, it was implemented smoothly and effectively. Peter also contributed meaningfully to every project we worked on. He's a tireless worker, consistently delivering high-quality and high-volume output. His work ethic is matched by his technical skill — a combination that truly sets him apart. Young, dynamic, and brilliant, Peter brought great energy to the team and raised the bar for all of us. I highly recommend hiring him — any team would be lucky to have him.

François BEAUFILS

Head of UI @ STOIC.

<https://www.linkedin.com/in/francoisbeaufils>

I am delighted to recommend Peter, an exceptionally talented and dedicated individual who consistently goes above and beyond to support others. Peter is not only highly skilled in programming, but also demonstrates an impressive ability to collaborate and share knowledge. One of Peter's most outstanding qualities is their unwavering willingness to help. Whether it's guiding a colleague through a complex challenge, offering insightful advice, or simply being a reliable presence in a team, he's always available for helping others.