



SLAIF

Slovenska
tovarna UI

Slovenian
AI Factory

Razvijanje rešitev umetne inteligence v sodelovanju s SLAIF

Uroš Lotrič, UL FRI

Cilji

- Prelivanje akademskih rešitev v prakso
- Množica raznovrstnih aplikacij
- Uporaba nacionalnih in evropskih superračunalniških in oblačnih virov
- Opolnomočenje MSP za pripravlanje in ponujanje rešitev UI na trgu
- Povezovanje uporabnikov in ponudnikov



Zeleni prehod

energija, pametna proizvodnja, agroživilstvo



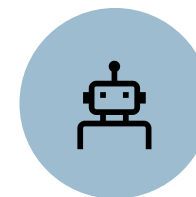
Zdravje in biotehnologija

Diagnostika, osebna medicina, odkrivanje zdravil



Digitalna družba

jezikovne tehnologije, generativni modeli UI, javni sektor, izobraževanje



Znanost

digitalna humanistika, materiali, vede o življenju, medicina, modeliranje

Storitve

Svetovanje pri vključevanju UI v poslovne procese

- povezovanje s kompetentnimi sogovorniki
- izbiranje podatkovnih množic, modelov, delovnih tokov
- izbiranje ogrodij za delo

Pridobivanje računskih virov

- svetovanje pri izbiri sistema
- pomoč pri prijavi na razpise

Podpora pri preoblikovanju ideje v izdelek

- prilagajanje delovnih tokov za ciljne aplikacije
- podpora pri pripravi rešitev
- načrtovanje potreb za produkcijsko rabo

Katalog rešitev

- Vsebina
 - podatkovne množice
 - modeli
 - delovni tokovi UI
- Navodila za uporabo na nacionalni infrastrukturi
- Učinkovito iskanje: metapodatki, koncept FAIR
- Urednik portala

Primeri storitev – zeleni prehod

Domain-Agnostic Few-Shot Object Counting and Detection



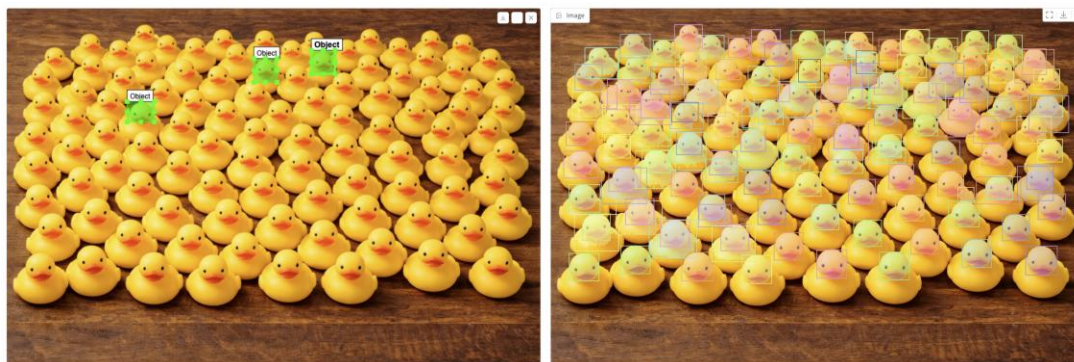
<https://huggingface.co/spaces/jerpelhan/GECO2-demo>

Target users: Manufacturing companies, industrial SMEs

Responsible: UL FRI

Type of service: model

Availability: Q4/2026



General

This service enables automated counting and detection of objects in images or videos using only a small number of example annotations. It helps organizations in industry, research, and the public sector quickly gather quantitative insights from visual data, reducing manual effort and enabling rapid deployment across multiple domains. The service provides a real-time inference process to detect and count objects in customer provided images.

Used technologies

The service leverages foundational computer-vision models that generalize from minimal labelled data to accurately detect and count objects across diverse visual domains. By combining feature embedding and clustering techniques the model can identify and count objects of similar shapes, sizes, and appearances, even in complex scenes with cluttered backgrounds. Few-shot learning allows the models to identify similar objects without any extensive retraining or finetuning, making them highly versatile for cross-domain applications. Post-processing and aggregation methods are applied to ensure accurate counting, handle overlapping or partially visible objects, and maintain robust performance under variable lighting or imaging conditions. Code for models used in this service is also available on GitHub:

Expected outcome

The outputs include detection results as bounding boxes and object counts on customer provided images or sequences.

GeCo2: Generalized-Scale Object Counting with Gradual Query Aggregation

GeCo2 is a few-shot, category-agnostic detection counter. With only a small number of exemplars, GeCo2 can detect and count all instances of the target object in an image without any retraining.

1. Upload an image or click an example below.
2. Draw bounding boxes on the target object (preferably ~3 instances).
3. Click **Count**.
4. If needed, adjust the threshold.

Drop Image Here
-OR-
Click to Upload

Image

Total Count:

Predict masks

Threshold:

Count

Examples (click an image to load it into the annotator)



<https://huggingface.co/spaces/jerpelhan/GECO2-demo>

Primeri storitev – digitalna družba

Adaptation of a Large Language Model to a Specific Domain



<https://arena.cjvt.si/si>

Target users: SMEs, enterprises, public sector, researchers

Responsible: UL FRI

Type of service: pipeline

Availability: Q3/2027

**Generativni model
za slovenščino**
Generative Model
for Slovene **GaMS: “**

General

This pipeline provides a code and a set of instructions how to adapt a large language model to a specific domain, e.g., specific industry or scientific area. The prerequisites are sufficient amount of domain specific data and domain know-how. It first helps the users in preparing data for instruction following based on the domain data and provides a code and know how how to expand the initial small sample of domain specific instructions into a larger training dataset. Next, it provides the know-how and a code for fine-tuning the model with the created instruction-tuning dataset. Finally, it provides a code for efficient inference using the adapted model. A worked example of adaptation is provided.

Used technology

The pipeline uses Slovene LLM GaMS as well as other state-of-the-art open large language models and libraries that support instruction set expansion, LLM fine tuning with LoRA and QLoRA, and efficient inference with vLLM.

Expected outcome

The outputs include documentation for domain adaptation and code for domain adaptation.

Primeri storitev – zdravje in biotehnologije

FoodyLLM – AI Copilot for Food Nutrition Intelligence



<https://huggingface.co/Matej/FoodyLLM>

Target users: Nutritionists, food scientists, health data professionals, app developers

Responsible: JSI

Type of service: pipeline

Availability: Q4/2026



General

FoodyLLM is an AI tool designed to analyze and understand food information from text such as recipes, product descriptions, or ingredient lists. It can estimate the nutritional content of recipes (for example fat, carbohydrates, protein, sugar, and salt), predict nutrition labels like the UK FSA traffic-light system, and convert food descriptions into standardized, structured data. This helps companies work with food data more easily, support nutrition analysis, and enable better digital food and health applications.

Used technologies

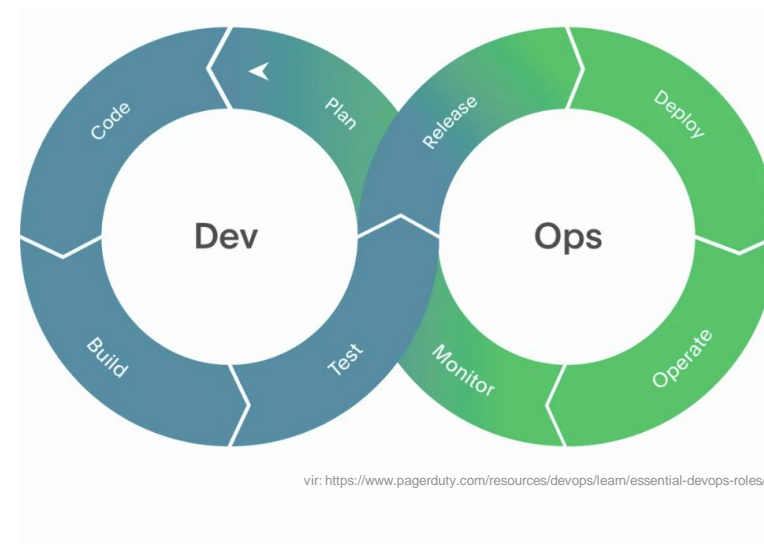
FoodyLLM is built on a transformer-based LLM architecture fine-tuned in a multi-task learning setup to jointly handle macronutrient estimation, FSA traffic-light profiling, and semantic food data mapping. The model leverages food ontologies and nutritional databases during training to ground its predictions.

Expected outcome

Given a recipe's ingredients and quantities (and optionally its title), the model outputs: estimated macronutrient values (fat, carbohydrates, protein, salt, sugar); FSA traffic-light nutritional labels (low/medium/high) per nutrient; and semantically annotated food data aligned with established food ontologies for interoperability with FAIR data repositories and health information systems

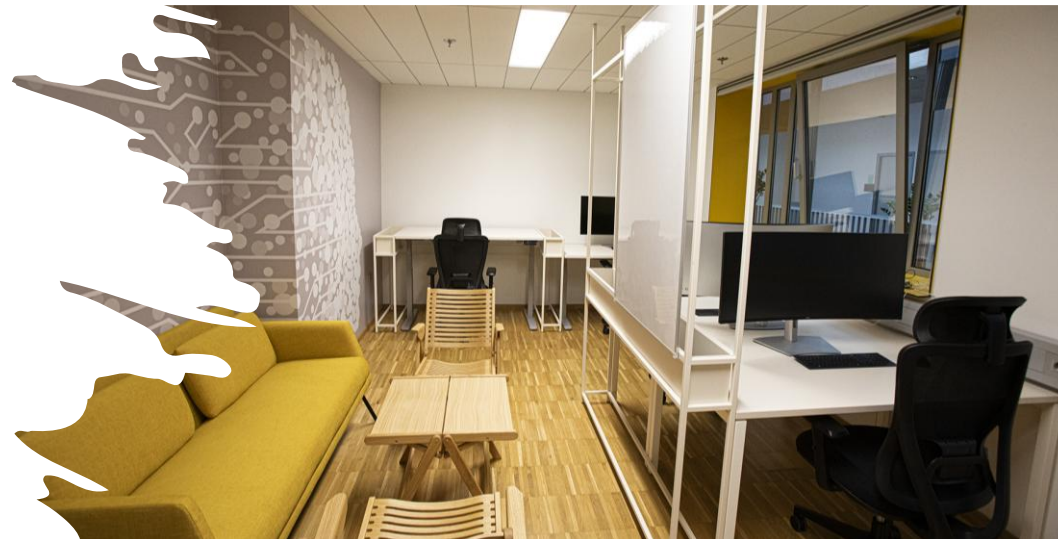
Od ideje do izdelka

- Ogled izdelkov v katalogu
 - samostjno preizkušanje
 - pomoč pri uporabi modelov na slovenski infrastrukturi
- Povezovanje z raziskovalno skupino
 - svetovanje
 - pomoč pri kuraciji podatkov
- Delo v sodelovalnih prostorih
 - sodelovanje z domenskimi eksperti pri uporabi, prilagajanju, nadgradnji modelov
 - pomoč pri učenju modelov na HPC
- Prehod v predproduksijsko rabo (PoC)
 - sodelovanje pri načrtovanju produkcijske rabe
 - nameščanje na testno opremo za predproduksijsko rabo v okolju Kubernetes/HPC



Sodelovalni prostori

- Lokacije: IJS, UL, UM, FIŠ
- UL, pet delovnih mest
 - Nvidia DGX Spark superčip GB10, 128 GB RAM
 - v naprej pripravljeni delovni tokovi za UI <https://build.nvidia.com/spark>
 - optična povezava na superračunalniško infrastrukturo
 - inferenčni strežnik Nvidia GH200 za testiranje namestitev v oblak
- Dostop za uporabnike SLAIF
 - rezervacijski sistem



Primeri izdelkov: Orange data mining

orange DATA MINING

Screenshots Download Blog Docs Workshops Donate Search

Data Mining Fruitful and Fun

Open source machine learning and data visualization.

[Download Orange 3.39.0](#)

Nov 09, 2025
DALI4US: The Excursions Begin
 This week's introductory webinar with teachers from more than 50 primary schools marked the official start of DALI4US classroom activities in Slovenia.

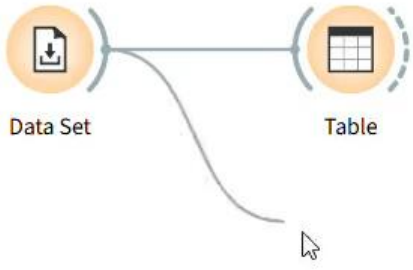
Nov 03, 2025
DALI4US: Preparations are underway
 As part of the DALI4US project, over 70 Slovenian teachers and 2000 students will explore various AI topics through four hands-on activities.

Single Cell Datasets Louvain Clustering t-SNE Differential Expression GO Browser Genes

Input ID	Entrez ID	Name	Description	Synonyms
IL1B	3553	IL1B	interleukin 1 beta	IL-1, IL1-BET...
CD74	972	CD74	CD74 molecule	DHLA...
FCER1G	2207	FCER1G	Fc fragment of ...	FCRG
CD14	929	CD14	CD14 molecule	
S100A11	6282	S100A11	S100 calcium ...	HEL-S-43, ...
CFD	1675	CFD	complement ...	ADIPSIN, AD...
MNDA	4332	MNDA	myeloid cell ...	PYHIN3
DETN	56770	DETN	receptin	ADSC F1772

GO term	Cluster	Reference	p-value	FI
biological_process	85 (94.44%)	17899 (87.36%)	0.02283	0
immune system process	65 (72.22%)	3068 (14.97%)	5.4e-34	1
immune response	55 (61.11%)	2160 (10.54%)	4.5e-31	7
leukocyte activation	41 (45.56%)	1180 (5.76%)	6.4e-27	5
immune effector process	37 (41.11%)	1196 (5.84%)	2.6e-22	6
cell activation involved in immune respon...	30 (33.33%)	690 (3.37%)	6.1e-22	1
leukocyte degranulation	27 (30.00%)	533 (2.60%)	2.3e-21	3
leukocyte mediated immunity	30 (33.33%)	815 (3.98%)	6.3e-20	7
myeloid leukocyte mediated immunity	27 (30.00%)	550 (2.68%)	5.0e-21	6
neutrophil mediated immunity	26 (28.89%)	499 (2.44%)	7.2e-21	8
neutrophil degranulation	26 (28.89%)	485 (2.37%)	3.6e-21	5

orange@biolab.si



Primeri izdelkov: govorne tehnologije



Sintetizator slovenskega govora

Vnesi besedilo

Govorec: -

Superračunalnik Vega je povečal računalniške zmogljivosti v Sloveniji in celotni Evropi. Pomaga evropskim raziskovalcem in uporabnikom iz javnega ter industrijskega sektorja po vsej Evropi.

I

Normaliziraj

Naglasni

Sintetiziraj

Predvajaj

Shrani

Nastavitve

